REQUEST FOR REDESIGNATION AND MAINTENANCE PLAN FOR OZONE ATTAINMENT IN THE 8-HOUR OZONE BASIC NONATTAINMENT AREA

St. Joseph and Elkhart Counties, Indiana

Developed By:
The Indiana Department of Environmental Management

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REQUEST FOR REDESIGNATION AND MAINTENANCE PLAN FOR OZONE ATTAINMENT IN THE 8-HOUR OZONE BASIC NONATTAINMENT AREA

ST. JOSEPH AND ELKHART COUNTIES, INDIANA

1.0 INTRODUCTION

This document supports Indiana's request that St. Joseph and Elkhart counties, in northern Indiana, be redesignated from nonattainment to attainment of the 8-hour ozone standard. These counties have recorded three (3) years of complete, quality-assured ambient air quality monitoring data for the years 2003 – 2005 demonstrating attainment with the 8-hour ozone standard.

Section 107 of the Clean Air Act (CAA) establishes specific requirements to be met in order for an area to be considered for redesignation including:

(a) A determination that the area has attained the 8-hour ozone standard.
(b) An approved State Implementation Plan (SIP) for the area under Section 110(k).
(c) A determination that the improvement in air quality is due to permanent and enforceable reductions in emissions resulting from implementation of the SIP and other federal requirements.
(d) A fully approved maintenance plan under Section 175(A).
(e) A determination that all Section 110 and Part D requirements have been met.

This document addresses each of these requirements and provides additional information to support continued compliance with the 8-hour ozone standard.

1.1 Background

The Clean Air Act Amendments of 1990 (CAAA) required areas designated nonattainment for the National Ambient Air Quality Standard (NAAQS) for ozone to develop SIPs to expeditiously attain and maintain the standard. In 1997 the United States Environmental Protection Agency (U.S. EPA) revised the air quality standard for ozone, replacing the 1979 1-hour standard with an 8-hour ozone standard set at of 0.08 parts per million (ppm). The standard was challenged legally and upheld by the U.S. Supreme Court in February of 2001. The U.S. EPA designated areas under the 8-hour ozone standard on April 15, 2004 as attainment, nonattainment, or unclassifiable.

St. Joseph and Elkhart counties were designated as Marginal nonattainment for the one-hour ozone standard pursuant to the 1990 CAAA. After several years of monitored data showing the air quality met the one-hour standard, St. Joseph and Elkhart counties were redesignated to maintenance on September 6, 1994. On April 15, 2004, U.S. EPA designated St. Joseph and Elkhart counties as Basic nonattainment and subject to the new 8-hour ozone requirements. This designation requires the development of a plan to reduce volatile organic compounds (VOCs) and oxides of nitrogen (NO_x) emissions and a demonstration that the area will meet the 8-hour ozone standard by June 15, 2009.

1.2 Geographical Description

St. Joseph and Elkhart are adjacent counties, located in northern Indiana. The cities of South Bend and Mishawaka are located in St. Joseph County, the cities of Elkhart and Goshen are located in Elkhart County. This area is shown in Figure 3.1.

1.3 Status of Air Quality

Ozone monitoring data for the most recent three (3) years, 2003 through 2005, demonstrates that air quality has met the NAAQS for ozone in this Basic nonattainment area. This fact, accompanied by the permanent and enforceable reductions in emission levels discussed in Section 4.0, justifies a redesignation to attainment for the subject area based on Section 107(d)(3)(E) of the CAAA.

2.0 REQUIREMENTS FOR REDESIGNATION

2.1 General

Section 110 and Part D of the CAAA list a number of requirements that must be met by nonattainment areas prior to consideration for redesignation to attainment. In addition, U.S. EPA has published detailed guidance in a document entitled, *Procedures for Processing Requests to Redesignate Areas to Attainment*, issued September 4, 1992, to Regional Air Directors. This document is hereafter referred to as the "Redesignation Guidance". This Request for Redesignation and Maintenance Plan is based on the Redesignation Guidance, supplemented with additional guidance received from staff of the Regulatory Development Section of U.S. EPA Region V.

The subsections below refer in greater detail to the requirements listed in Section 1.0 of this document. Each subsection describes how the requirement has been met. The pertinent sections of the CAAA are referenced where appropriate.

2.2 Ozone Monitoring
107(d)(3)(E)(i)

1) A demonstration that the NAAQS for ozone, as published in 40 CFR 50.10, has been attained. Ozone monitoring data must show that violations of the ambient standard are no longer occurring.

2) Ambient monitoring data quality assured in accordance with 40 CFR 58.10, recorded in the U.S. EPA Air Quality System (AQS) database, and is available for public view.

3) A showing that the three-year average of the fourth highest values, based on data from all monitoring sites in the area or its affected downwind environs, are below 0.085 parts per billion (ppm). This showing must rely on three (3) complete, consecutive calendar years of quality assured data.

4) A commitment that, once redesignated, the State will continue to operate an appropriate monitoring network to verify the maintenance of the attainment status.

2.3 Emission Inventory
107(d)(3)(E)(iii)

1) A comprehensive emissions inventory of the precursors of ozone completed for the base year.

2) A projection of the emission inventory for a year at least 10 years following redesignation.

3) A demonstration that the projected level of emissions is sufficient to maintain the ozone standard.

4) A demonstration that improvement in air quality between the year violations occurred and attainment was achieved is based on permanent and enforceable emission reductions and not on temporary adverse economic conditions or unusually favorable meteorology.

5) Provisions for future annual updates of the inventory to enable tracking of the emission levels, including an annual emission statement from major sources.

2.4 Modeling Demonstration

While no modeling is required for redesignating ozone nonattainment areas, IDEM has incorporated photochemical modeling information as part of this document to further support its request for St. Joseph and Elkhart counties to be redesignated to attainment.

2.5 Controls and Regulations

107(d)(3)(E)(ii) & 107(d)(3)(E)(v)

1) A U.S. EPA approved SIP control strategy that includes Reasonably Available Control Technology (RACT) requirements for existing stationary sources covered by Control Technology Guidelines (CTG) and non-CTG RACT for all major sources.

2) Evidence that control measures required in past ozone SIP revisions have been fully implemented.

3) Acceptable provisions to provide for new source review.

4) Assurances that existing controls will remain in effect after redesignation, unless the State demonstrates through photochemical modeling that the standard can be maintained without one (1) or more controls.

5) If appropriate, a commitment to adopt a requirement that all transportation plans conform with, and are consistent with, the SIP.

2.6 Corrective Actions for Potential Future Violations of the Standard

1) A commitment to submit a revised plan eight (8) years after redesignation.

2) A commitment to expeditiously enact and implement additional contingency control measures in response to exceeding specified predetermined levels (triggers) or in the event that future violations of the ambient standard occurs.

3) A list of potential contingency measures that would be implemented in such an event.

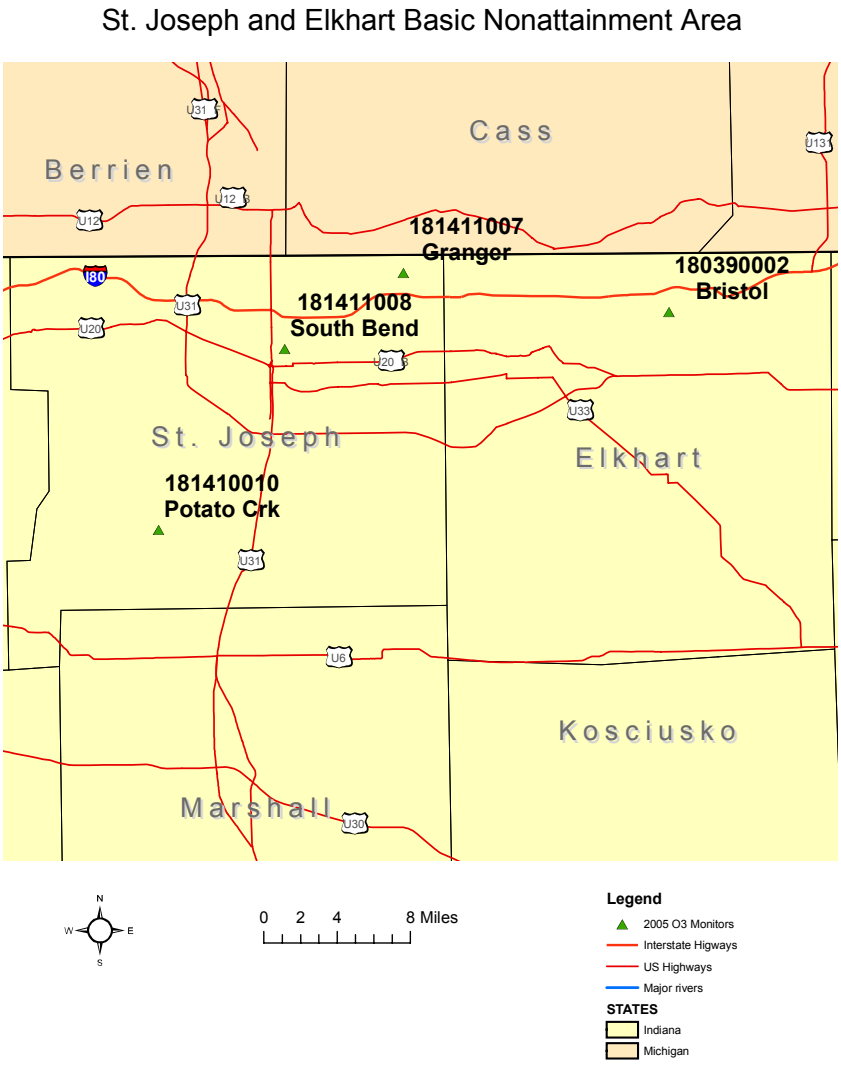
4) A list of VOC and NO_x sources potentially subject to future controls.

3.0 OZONE MONITORING

3.1 Ozone Monitoring Network

There are four (4) monitors measuring ozone concentrations in St. Joseph and Elkhart counties. All of these monitors are currently operated by IDEM's Office of Air Quality (OAQ). A listing of the existing monitors' four (4) highest readings from 2003 through 2005 are shown in Table 3.1 and were retrieved from the U.S. EPA's Air Quality System (AQS). The locations of the monitoring sites for this nonattainment area are shown in Figure 3.1.

Figure 3.1 St. Joseph and Elkhart Basic Nonattainment Area



3.2 Ambient Ozone Monitoring Data

The following information is taken from U.S. EPA's "Guideline on Data Handling Conventions for the 8-Hour Ozone National Ambient Air Quality Standard (NAAQS)," EPA-454/R-98-017, December 1998.

Three (3) complete years of ozone monitoring data are required to demonstrate attainment at a monitoring site. The 8-hour primary and secondary ozone ambient air quality standards are met at an ambient air quality monitoring site when the three (3) year average of the annual fourth-highest daily maximum 8-hour average ozone concentration is less than or equal to 0.08 ppm. When this occurs, the site is said to be in attainment. Three (3) significant digits must be carried in the computations. Because the third decimal digit, in ppm, is rounded, 0.084 ppm is the largest concentration that is less than, or equal to, 0.08 ppm. These data handling procedures are applied on an individual basis at each monitor in the area. An area is in compliance with the 8-hour ozone NAAQS if, and only if, every monitoring site in the area meets the NAAQS. An individual site's three (3) year average of the annual fourth highest daily maximum 8-hour average ozone concentration is also called the site's *design value*. The air quality design value for the area is the highest design value among all monitoring sites in the area.

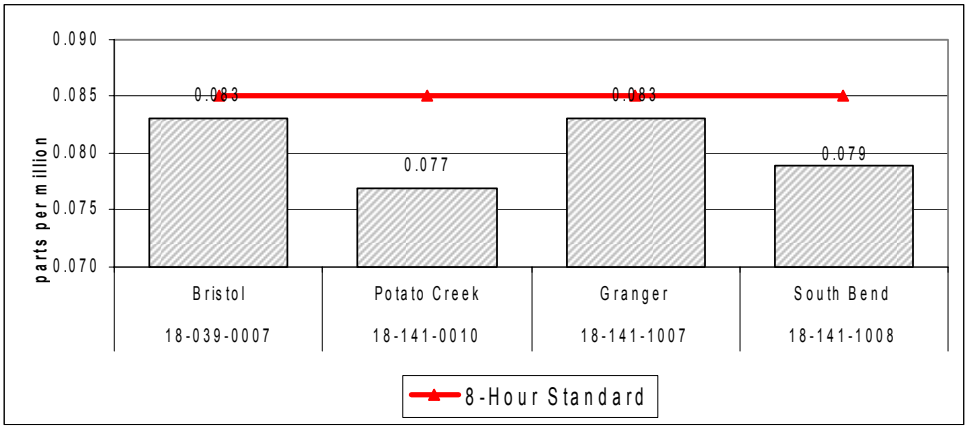
Table 3.1 outlines the annual fourth high values by site and the 2003 - 2005 design values for the four active monitoring sites in the nonattainment area.

Table 3.1 Monitoring Data for St. Joseph and Elkhart Counties 2003-2005

				1ST	2ND	3RD	4TH	2003-2005
SITE ID	COUNTY	LOCATION	YEAR	8-HR	8-HR	8-HR	8-HR	design value
18-039-0007	Elkhart	Bristol	2003	0.093	0.091	0.088	0.087	
18-039-0007			2004	0.08	0.079	0.078	0.077	
18-039-0007			2005	0.094	0.089	0.088	0.086	0.083
18-141-0010	St. Joseph	Potato Creek	2003	0.094	0.082	0.082	0.081	
18-141-0010			2004	0.079	0.076	0.073	0.073	
18-141-0010			2005	0.081	0.08	0.079	0.078	0.077
18-141-1007	St. Joseph	Harris Twp	2003	0.097	0.095	0.092	0.086	
18-141-1007			2004	0.091	0.084	0.081	0.076	
18-141-1007			2005	0.096	0.088	0.087	0.086	0.083
18-141-1008	St. Joseph	South Bend	2003	0.095	0.084	0.083	0.082	
18-141-1008			2004	0.087	0.08	0.072	0.072	
18-141-1008			2005	0.092	0.087	0.084	0.084	0.079

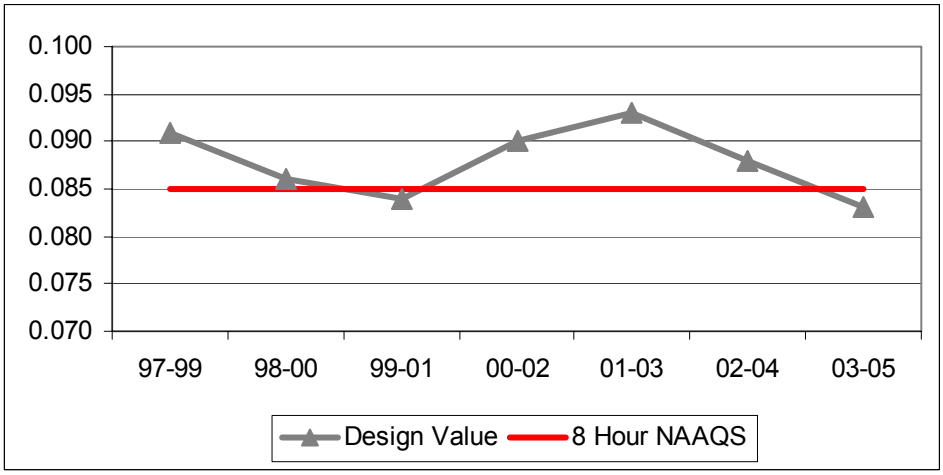
The graph below visually demonstrates the design values for this nonattainment area.

Graph 3.1 2003-2005 Design Values for St. Joseph and Elkhart Nonattainment Area



The design values calculated for the St. Joseph and Elkhart counties nonattainment area demonstrate that the NAAQS for ozone has been attained.

Graph 3.2 Trends in St. Joseph/Elkhart 8-Hour Design Values, 1997 through 2005



The above graph shows the trend in design values for the region over the past nine years. A comprehensive list of the site's design values over this time period is in Appendix A. The area's design values have trended downward as emissions have declined due to such programs as the Acid Rain program and cleaner automobiles and fuels both regionally and locally. U.S. EPA's rule to control nitrogen oxides from specific source categories (40 CFR Parts 51, 72, 75 and 96, published on October 17, 1998 and referred to as the "NO_x SIP Call") has significantly reduced emissions from large electric generating units (EGUs), industrial boilers and cement kilns. Indiana's NO_x Rule was adopted on June 6, 2001 (326 IAC 10-3 and 10-4). An analysis of meteorological conditions and monitoring values is in Section 7.0 and supports the conclusion that attainment of the standard as of 2005 is not the result of unusually favorable meteorological

conditions. It is expected that this downward trend will continue as the above programs continue and the U.S. EPA Clean Air Interstate Rule is implemented.

3.3 Quality Assurance

IDEM has quality assured all data shown in Appendix A in accordance with 40 CFR 58.10 and the Indiana Quality Assurance Manual. IDEM has recorded the data in the AQS database and, thus, the data are available to the public.

3.4 Continued Monitoring

Indiana commits to continue monitoring ozone levels at the sites indicated in Table 3.1 and Appendix A. IDEM will consult with U.S. EPA Region V staff prior to making changes to the existing monitoring network, should changes be necessary in the future. IDEM will continue to quality assure the monitoring data to meet the requirements of 40 CFR 58. Connection to a central station and updates to the IDEM website (www.state.in.us/idem/) will provide real time availability of the data and knowledge of any exceedances. IDEM will enter all data into AQS on a timely basis in accordance with federal guidelines.

4.0 EMISSION INVENTORY

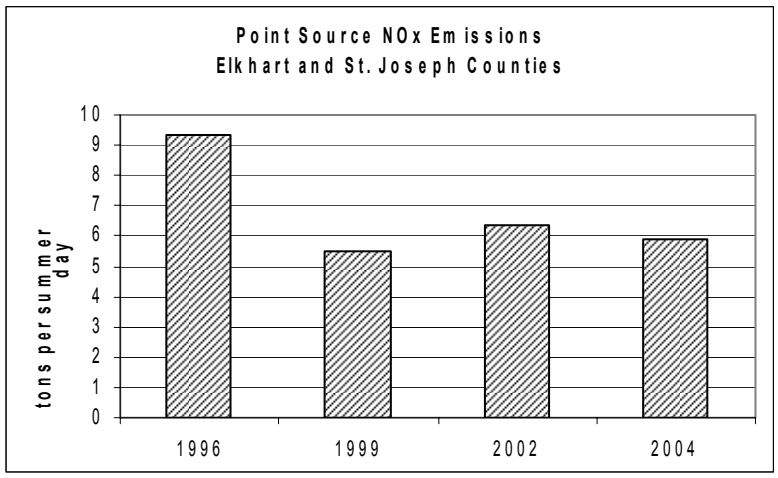
U.S. EPA's Redesignation Guidance requires the submittal of a comprehensive inventory of ozone precursor emissions (VOC and NO_x) representative of the year when the area achieves attainment of the ozone air quality standard. Indiana must also demonstrate that the improvement in air quality between the year that violations occurred and the year that attainment was achieved is based on permanent and enforceable emission reductions. Other emissions inventory-related requirements include a projection of the emission inventory to a year at least ten (10) years following redesignation; a demonstration that the projected level of emissions is sufficient to maintain the ozone standard; and a commitment to provide future updates of the inventory to enable tracking of emission levels during the ten (10) year maintenance period.

The following subsections address each of these requirements.

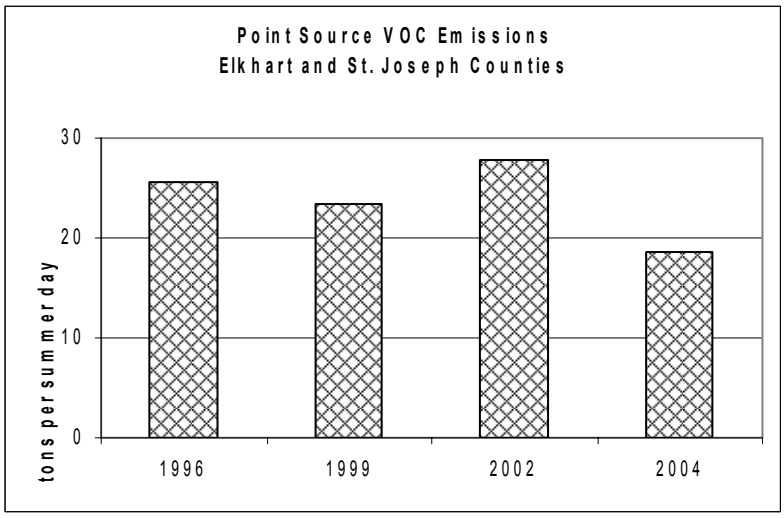
4.1 Emission Trends

Graphs 4.1 and 4.2 show the trend in point source emissions of NO_x and VOC, respectively, that generally correspond to the years of monitored values referenced in this petition. The point source data are taken from Indiana's annual emissions reporting program.

Graph 4.1 St. Joseph/Elkhart NO_x Point Source Emissions 1996 – 2004



Graph 4.2 St. Joseph/Elkhart VOC Point Source Emissions 1996 - 2004



EGU Sources

Graph 4.3 depicts the trends in statewide NO_x emissions from EGUs. While ozone and its precursors are also transported into this region from outside areas, this information does provide some indication of the impact that Indiana sources may have on the nonattainment area. The emissions are decreasing substantially in response to national programs affecting all EGUs such as the Acid Rain program and the NO_x SIP Call. Other sectors of the inventory also impact ozone formation, but large regional sources such as EGUs have a substantial impact on the formation of ozone.

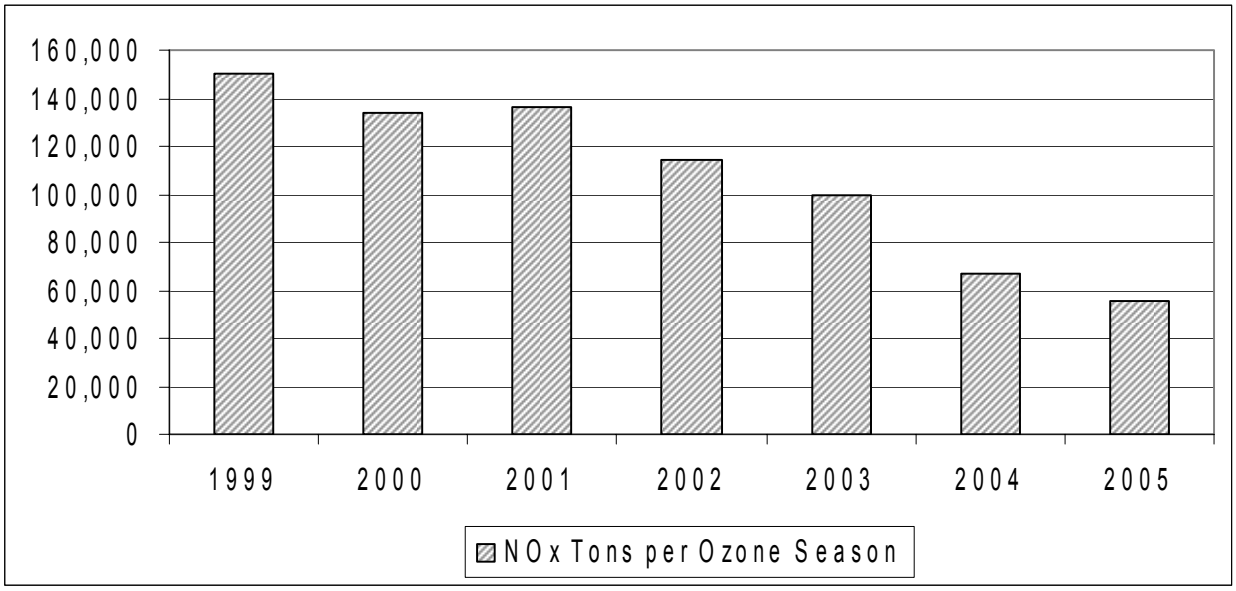
These data were taken from U.S. EPA's Clean Air Markets Acid Rain database[1]. Data are available sooner for these units than other point sources in the inventory because of the NO_x SIP

[1] http://www.epa.gov/airmarkets

Call budget and trading requirements. Information from 2003 is significant because some EGUs started operation of their NO_x SIP Call controls in order to generate Early Reduction Credits for their future year NO_x budgets. The first season of the SIP Call budget period began May 31, 2004.

As part of the NO_x SIP Call, the states were required to adopt into their rules a budget for all large EGUs. Indiana's budget is referenced in 326 IAC 10-4. The budget represents a statewide cap on NO_x emissions. Although each unit is allocated emissions based upon historic heat input, utilities can meet this budget by over-controlling certain units or purchasing credits from the market to account for overages at other units. To summarize, NO_x emissions have dramatically decreased over the years represented on these graphs. These emissions, capped by the state rule, should remain at least this low through the maintenance period covered by this request.

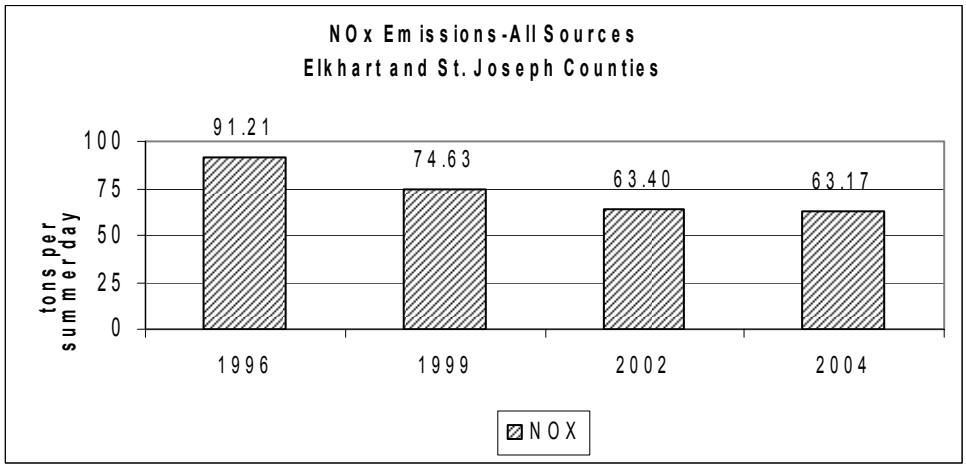
Graph 4.3 Statewide NO_x Emissions from Electric Generating Units 1999-2005



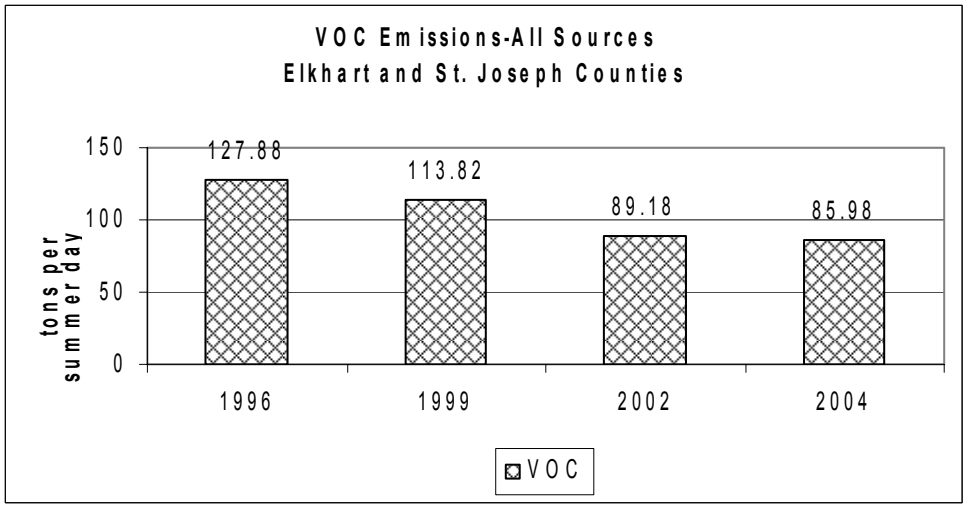
All Anthropogenic Sources

Periodic inventories, which include emissions from all sectors - mobile, area, non-road, and point sources - were prepared for 1996, 1999, 2002 and 2004. Graphs 4.5 and 4.6 show the trends for the total emissions for all anthropogenic source categories in these years, which also roughly follow the years of monitored trends discussed in Section 3. Graphs and data tables of emissions from each source category are available in Appendix B.

Graph 4.5 NO_x Emissions Trends, 1996 – 2004, All Sources in St. Joseph and Elkhart Counties



Graph 4.6 VOC Emissions Trends, 1996 – 2004, All Sources in St. Joseph and Elkhart Counties



4.2 Base Year Inventory

IDEM prepared a comprehensive inventory for St. Joseph and Elkhart counties, including Area, Mobile, and Point sources for precursors of ozone (volatile organic compounds and nitrogen oxides) for the base year 2004 (the middle year of the area's attainment design value).

- Area sources were grown from the Indiana 2002 periodic inventory submitted to U.S. EPA.
- Mobile source emissions were calculated from MOBILE6 produced emission factors and data extracted from the region's travel-demand model.

- Point source information was compiled from IDEM's 2004 annual emissions statement database and the 2005 U.S. EPA's Clean Air Markets acid rain database.
- Biogenic emissions are not included in these summaries.
- Nonroad emissions were grown from the 2002 National Emissions Inventory (NEI). To address concerns about the accuracy of some of the categories in U.S. EPA's nonroad emissions model, the Lake Michigan Air Directors' Consortium (LADCO) (Midwest Regional Planning Organization), contracted with two (2) companies to review the base data and make recommendations. One of the contractors also estimated emissions for two (2) nonroad categories not included in U.S. EPA's nonroad model. Emissions were estimated for commercial marine vessels and railroads. Recreational motorboat population and spatial surrogates (used to assign emissions to each county) were significantly updated. The populations for the construction equipment category were reviewed and updated based upon surveys completed in the Midwest and the temporal allocation for agricultural sources was also updated. A new nonroad estimation model was provided by U.S. EPA for the 2002 analysis.

Appendix B contains data tables and graphs of all these emissions.

4.3 Emission Projections

In consultation with the U.S. EPA and other stakeholders, IDEM selected the year 2020 as the maintenance year for this redesignation request. This document contains projected emissions inventories for 2010 and 2020.

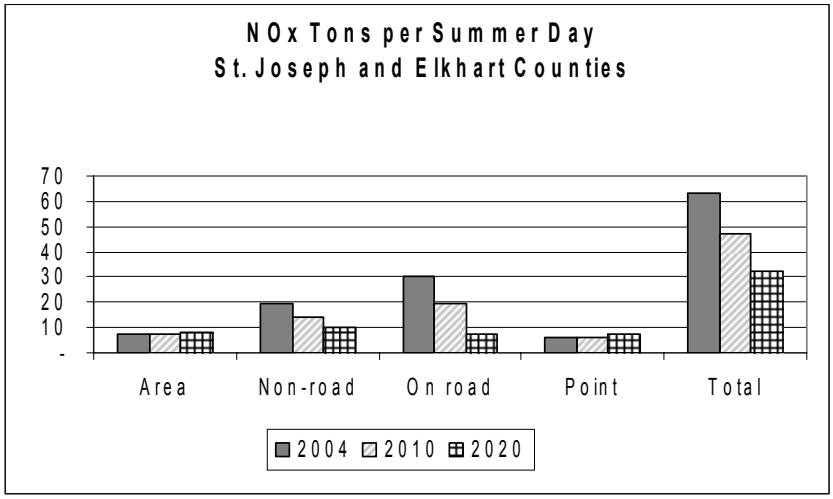
IDEM performed emission projections for St. Joseph and Elkhart using the following approaches:

- Mobile source emission projections are based on the U.S. EPA MOBILE6 model. The nonattainment area emissions were analyzed using the Michiana Area Council of Governments' (MACOG) Travel Demand Model. This analysis is described in more detail in Section 5.0. All projections were made in accordance with "Procedures for Preparing Emissions Projections"; U.S. EPA-45/4-91-019.
- Emissions inventories are required to be projected to future dates to assess the influence growth and future controls will have. The Midwest Regional Planning Organization (Midwest RPO) has developed growth and control files for Point, Area, and Non-road categories. These files were used to develop the future year emissions estimates used in this document. This was done so that the inventories used for redesignation are consistent with modeling performed in the future.

The detailed inventory information for St. Joseph and Elkhart counties for 2010 and 2020 is in Appendix B. Emission trends are an important gauge for continued compliance with the ozone standard. Therefore, IDEM performed an initial comparison of the inventories for the base year (2004), interim year (2010), and maintenance year (2020) for St. Joseph and Elkhart counties. Graphs 4.7 and 4.8 visually compare the 2004 (base year) estimated emissions with the 2010 and 2020 projected emissions for St. Joseph and Elkhart counties. Mobile Source emission

inventories are described in Section 5.0. In addition to the Midwest RPO's estimates, emissions were projected based upon the statewide EGU NO_x budgets from the Indiana NO_x rule for affected sources.

Graph 4.7 Comparison of 2004 Estimated and 2010 and 2020 Projected NO_x Emissions for St. Joseph and Elkhart Counties



Graph 4.8 Comparison of 2004 Estimated and 2010 and 2020 Projected VOC Emissions for St. Joseph and Elkhart Counties

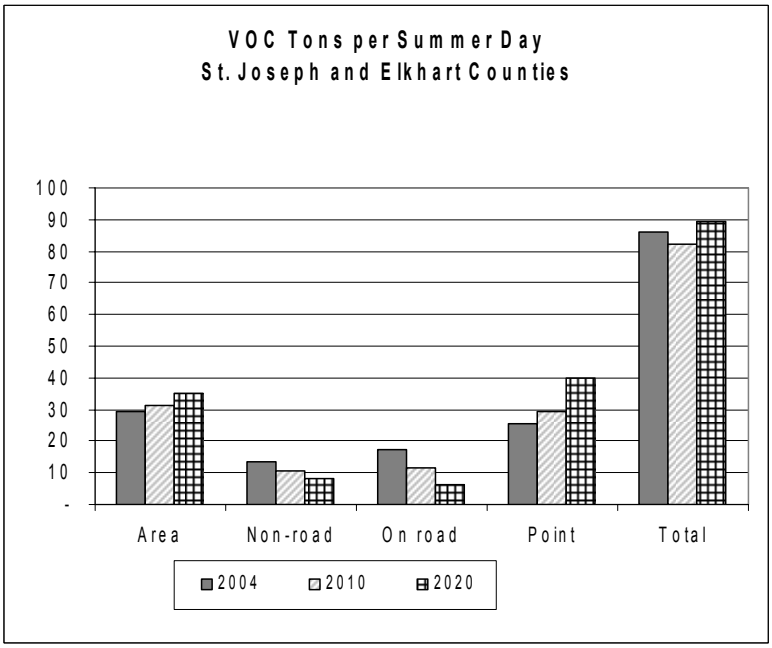


TABLE 4.1 Comparison of 2004 Estimated and 2020 Projected Emission Estimates in Tons Per Summer Day, St. Joseph and Elkhart Counties, Indiana

	2004	2020	Change	% change
NOX	63.17	32.28	-30.89	-48.90
VOC	85.98	89.31	3.33	3.87

NO_x emissions within St. Joseph and Elkhart counties are projected to decline by more than 48% between 2004 and 2020 as shown in Table 4.1. Emission reduction benefits from U.S. EPA Rules covering the NO_x SIP Call, Tier II Motor Vehicle Emissions Standards and Gasoline Sulfur Control Requirements[2], Highway Heavy-Duty Engine Rule[3] and Non-Road Diesel Engine Rule[4] are factored into the changes. Further, due to implementation of the NOx SIP Call across the eastern United States, NOx and ozone levels entering this area will also be decreased. The Clean Air Interstate Rule (CAIR), issued in March 2005 and to be implemented in late 2006, will reduce regional EGU NOx emissions by approximately another 15% in 2015. Since CAIR is a regional cap and trade program, it cannot be predicted at this time what effect this will have on EGU units located in St. Joseph and Elkhart or other upwind counties at this time. Therefore, potential reductions are not included in Graph 4.5 or Table 4.1. VOC emissions within the St. Joseph and Elkhart counties are projected to increase by a modest 3.87% between 2004 and 2020. Decreased
VOC emissions from the onroad and offroad sectors are outweighed by projected increased emissions from the area and point source sectors. Nevertheless, this modest increase is more than offset by the significant local and regional decreases in NO_x emissions to occur during the same time frame. This is supported by the results of photochemical modeling depicted in Section 7 of this document.

4.4 Demonstration of Maintenance

Ambient air quality data from all monitoring sites indicate that air quality in St. Joseph and Elkhart counties met the NAAQS for ozone in 2005. U.S. EPA's Redesignation Guidance (page 9) states, "A state may generally demonstrate maintenance of the NAAQS by either showing that future emissions of a pollutant or its precursors will not exceed the level of the attainment inventory, or by modeling to show that the future mix of sources and emissions rates will not cause a violation of the NAAQS." As outlined in Section 4.0, NO_x emissions will continue to decline, while VOC emissions increase slightly between 2004 (base year) and 2020. Section 7.0 further discusses the implications of these emissions trends and provides an analysis to support these conclusions. Therefore, air quality should meet the NAAQS ozone standard through the projected year of 2010 and 2020.

2 http://www.epa.gov/fedrgstr/EPA-AIR/2000/February/Day-10/a19a.htm
3 http://www.epa.gov/fedrgstr/EPA-AIR/1997/October/Day-21/a27494.htm
4 http://www.epa.gov/fedrgstr/EPA-AIR/1998/October/Day-23/a24836.htm

In Indiana, major point sources in all counties are required to submit air emissions information once every three (3) years or annually, if VOC potential to emit is greater than 250 tons or NO_x is greater than 2,500 tons, in accordance with the Emission Statement Rule, 326 IAC 2-6. IDEM prepares a new periodic inventory for all ozone precursor emission sectors every three (3) years. These ozone precursor inventories will be prepared for 2005, 2008, and 2011 as necessary to comply with the inventory reporting requirements established in the CAAA. Emissions information will be compared to the 2004 base year and the 2020 projected maintenance year inventories to assess emission trends, as necessary, to assure continued compliance with the ozone standard.

4.5 Permanent and Enforceable Emissions Reductions

Permanent and enforceable reductions of volatile organic compounds and oxides of nitrogen have contributed to the attainment of the 8-hour ozone standard. Some of these reductions were due to the application of RACT rules and some were due to the application of tighter federal standards on new vehicles. Also, Title IV of the Clean Air Act and the NO_x SIP Call required the reduction of oxides of nitrogen from utility sources. Section 6.0 identifies the emission control measures specific to the St. Joseph and Elkhart counties, as well as the implementation status of each measure.

4.6 Provisions for Future Updates

As required by Section 175A(b) of the CAAA, Indiana commits to submit to the Administrator, eight (8) years after redesignation, an additional revision of this SIP. The revision will contain Indiana's plan for maintaining the national primary ozone air quality standard for ten (10) years beyond the first ten (10) year period after redesignation.

5.0 TRANSPORTATION CONFORMITY BUDGETS

5.1 Overview

The Michiana Area Council of Governments (MACOG) is the Metropolitan Planning Organization (MPO) for St. Joseph and Elkhart counties. This organization has a travel demand forecast model that is used to simulate the traffic in the area and is used to predict what that traffic would be like in future years given growth expectations. The model is used mostly to identify where travel capacity will be needed and to determine the infrastructure requirements necessary to meet that need. It is also used to support the calculation of mobile source emissions. The travel demand forecast model is used to predict the total daily Vehicle Miles Traveled (VMT) and an EPA software program called MOBILE6 is used to calculate the emissions per mile. The product of these two outputs, once combined, is the total amount of pollution emitted by the on-road vehicles for the particular analyzed area.

5.2 Emission Estimations

Table 5.1 outlines the on-road emission estimates for St. Joseph and Elkhart counties for the years 2004, 2010, and 2020. The 2004 emission estimates are based on the actual travel demand model network for the year 2004. The 2020 emission estimates are based on a no-build (planned changes to the network do not occur) travel-demand model network for the year 2020. The 2010 emission estimates are based on the interpolation of the emissions deriving from the 2009 and 2020 travel demand model networks as planned.

Table 5.1 - Emission Estimations for On-Road Mobile Sources

St. Joseph and Elkhart	2004	2010	2020
VMT (miles/day)	11,653,900	12,408,975	13,282,621
VOC (tons/day)	17.52	11.56	6.64
NOx (tons/day)	30.11	19.29	7.73

Table 5.2 contains the 2020 motor vehicle emissions budget for St. Joseph and Elkhart counties.

Table 5.2 – Mobile Vehicle Emission Budgets

	2020
VOC (tons/day	6.64
NOx (tons/day)	7.73

6.0 CONTROL MEASURES AND REGULATIONS

This section provides specific information on the control measures implemented in St. Joseph and Elkhart counties, including CAAA requirements and additional state or local measures implemented beyond CAAA requirements.

6.1 Reasonably Available Control Technology (RACT)

As required by Section 172 of the CAAA, Indiana in the mid-1990s promulgated rules requiring RACT for emissions of VOCs. There were no specific rules required by the CAA, such as RACT for existing sources, for these two counties beyond statewide rules. Statewide RACT rules have applied to all new sources locating in Indiana since that time. The Indiana rules are located at 326 IAC 8. The following is a listing of applicable rules:

326 IAC 8-1-6 BACT for non-specific sources
326 IAC 8-2 Surface Coating Emission Limitations
326 IAC 8-3 Organic Solvent Degreasing Operations
326 IAC 8-4 Petroleum Sources
326 IAC 8-5 Miscellaneous Operation

6.2 Implementation of Past SIP Revisions

This nonattainment area was not required to develop an Attainment Demonstration SIP for the one-hour NAAQS. Similarly, since the area was only recently designated nonattainment for ozone and the area has now attained the standard, no Attainment Demonstration SIP is required to bring the area into attainment for the 8-hour NAAQS. Therefore, this requirement does not apply.

6.3 Nitrogen Oxides (NO_x) Rule

The U.S. EPA NO_x SIP Call required twenty-two (22) states to adopt rules that would result in significant emission reductions from large EGUs, industrial boilers, and cement kilns in the eastern United States. Indiana adopted this rule in 2001. Beginning in 2004, this rule will account for a reduction of approximately thirty-one percent (31%) of all NO_x emissions statewide compared to previous uncontrolled years.

Twenty-one other states have also adopted these rules. The result is that significant reductions will occur upwind and within the nonattainment area because of the number of affected units within the region. From Graphs 4.3 and 4.4 it can be seen that emissions covered by this program have been trending downward since 1998. Table 6.1, compiled from data taken from the U.S. EPA Clean Air Markets website, quantifies the gradual NO_x reductions that have occurred in Indiana as a result of Title IV of the Clean Air Act Amendments and the beginning of the NO_x SIP Call Rule. This cap will stay in place through 2008, at which time the CAIR program will supersede it.

Further, U.S. EPA has recently published Phase II of the NO_x SIP Call that establishes a budget for large (greater than 1 ton per day emissions) stationary internal combustion engines. This rule will decrease emissions statewide from natural gas compressor stations by 4,263 tons during the ozone season. This rule has been adopted and became effective February 26, 2006. Implementation of this rule will be in 2007.

TABLE 6.1 Trends in EGU Ozone Season NO_x Emissions Statewide in Indiana

Year	NOx Emissions - tons/ozone season
1997	152,834
1998	159,931
1999	149,827
2000	133,881
2001	136,052
2002	113,996
2003	99,283
2004	66,568
2005	55,486
Cap 2004-2015	43,654
2015 and Beyond	39,273

6.4 Measures Beyond Clean Air Act Requirements

Reductions in ozone precursor emissions have occurred, or are anticipated to occur, as a result of local and federal control programs. These additional control measures include:

Tier II Emission Standards for Vehicles and Gasoline Sulfur Standards

In February 2000, U.S. EPA finalized a federal rule to significantly reduce emissions from cars and light trucks, including sport utility vehicles (SUVs). Under this proposal, automakers will be required to sell cleaner cars, and refineries will be required to make cleaner, lower sulfur gasoline. This rule will apply nationwide. The federal rules will be phased in between 2004 and 2009. U.S. EPA has estimated that NO_x emission reductions will be approximately seventy-seven percent (77%) for passenger cars, eighty-six percent (86%) for smaller SUVs, light trucks, and minivans, and sixty-five to ninety-five percent (65-95%) reductions for larger SUVs, vans, and heavier trucks. VOC emission reductions will be approximately twelve percent (12%) for passenger cars, eighteen percent (18%) for smaller SUVs, light trucks, and minivans, and fifteen percent (15%) for larger SUVs, vans, and heavier trucks.

Heavy-Duty Diesel Engines

In July 2000, U.S. EPA issued a final rule for Highway Heavy Duty Engines, a program that includes low-sulfur diesel fuel standards, and will be phased in from 2004 through 2007. This rule applies to heavy-duty gasoline and diesel trucks and buses. This rule will result in approximately a forty percent (40%) reduction in NO_x from diesel trucks and buses, a large sector of the mobile sources NO_x inventory.

Clean Air Nonroad Diesel Rule

In May 2004, U.S. EPA issued the Clean Air Nonroad Diesel Rule. This rule applies to diesel engines used in industries such as construction, agriculture, and mining. It also contains a cleaner fuel standard similar to the highway diesel program. The new standards will cut emissions from nonroad diesel engines by over ninety percent (90%).

Nonroad diesel equipment, as described in this rule, currently accounts for forty-seven percent (47%) of diesel particulate matter (PM) and twenty-five percent (25%) of nitrogen oxides (NO_x) from mobile sources nationwide. Sulfur levels will be reduced in nonroad diesel fuel by ninety-nine percent (99%) from current levels, from approximately three-thousand (3,000) parts per million (ppm) now to (fifteen) 15 ppm in 2010. New engine standards take effect, based on engine horsepower, starting in 2008.

Together, these rules will substantially reduce local and regional sources of ozone precursors. The modeling analyses discussed in Section 7.0 includes these rules and shows the ozone concentrations expected to result from their implementation.

6.5 Controls to Remain in Effect

Indiana commits to maintain the control measures listed above after redesignation. Indiana hereby commits that any changes to its rules or emission limits applicable to VOC or NO_x sources, as required for maintenance of the ozone standard in St. Joseph and Elkhart counties, will be submitted to U.S. EPA for approval as a SIP revision.

Indiana, through IDEM's Office of Air Quality and its Office of Enforcement, has the legal authority and necessary resources to actively enforce any violations of its rules or permit provisions. After redesignation, it intends to continue enforcing all rules that relate to the emission of ozone precursors in St. Joseph and Elkhart counties.

6.6 New Source Review Provisions

Indiana has a longstanding and fully implemented New Source Review (NSR) program that is outlined in rule 326 IAC 2. The rule includes provisions for the Prevention of Significant Deterioration (PSD) permitting program in 326 IAC 2-2. Indiana's PSD program was conditionally approved on March 3, 2003 (68 FR 9892) and received approval on May 24, 2004 (69 FR 290710) by U.S. EPA as part of the SIP.

Any facility that is not listed in the 2002 emission inventory, or for the closing of which credit was taken in demonstrating attainment, will not be allowed to construct, reopen, modify, or reconstruct without meeting all applicable permit rule requirements. The review process will be identical to that used for new sources. Once the area is redesignated, OAQ will implement NSR through the PSD program which requires an air quality analysis to evaluate whether the new source will threaten the NAAQS.

7.0 MODELING

7.1 Summary of Modeling Results for National Emission Control Strategies in Final Rulemakings

Although U.S. EPA's redesignation guidance does not require modeling for ozone nonattainment areas seeking redesignation, extensive modeling has been performed covering the St. Joseph/Elkhart region to determine the effect of national emission control strategies on ozone levels. These modeling analyses determined that St. Joseph and Elkhart counties are significantly impacted by ozone and ozone precursor transport, and regional NO_x reductions are an effective way to maintain the 8-hour standard in this area. Future year modeled ozone concentrations are expected to be reduced by 10% to 15% from baseline design values. Examples of these modeling analyses are listed below.

7.2 U.S. EPA Modeling Analysis for HDE Final Rulemaking

U.S. EPA conducted modeling for Tier II vehicles and low-sulfur fuels. This analysis was performed in 2000 to support final rulemaking for the Heavy Duty Engine (HDE) and Vehicle Standards and Highway Diesel Fuel and its expected impact on ozone levels. "Technical Support Document for the Heavy Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements: Air Quality Modeling Analyses" (EPA420-R-00-028) was referenced for support of this ozone redesignation for the two counties. Base year emissions from 1996 were modeled for three ozone episodes: June 12-24, 1995; July 5-15, 1995; and August 7-21, 1995. Results of this modeling show that ozone impacts from these fuel emission control measures, as well as the NO_x SIP call, would be substantial in St. Joseph and Elkhart counties. Relative Reduction Factors (RRF) were calculated for each monitor in St. Joseph and Elkhart counties for future years 2007 and 2020. These RRFs were applied to the three-year (2001-2003) design values for the one ozone monitor in Elkhart County and the three monitors in St. Joseph County. The resulting future year design values for 2007 and 2020 were calculated as shown below in Table 7.1. The 2007 modeled future year design values for the one ozone monitor in Elkhart County and the three ozone monitors in St. Joseph County are in attainment of the 8-hour ozone NAAQS of 0.085 ppm.

Table 7.1 - Modeling Results from U.S. EPA HDE Rulemaking for St. Joseph and Elkhart Counties

Monitor ID	Monitor Name	County	Design Value 2001-2003	Modeled Relative Reduction Factor (RRFs)	Future Design Value	Modeled Relative Reduction Factor (RRFs)	Future Design Value
				2007 Base	2007	2020 Base	2020
180390002	Bristol	Elkhart	0.0803	0.8810	0.0708	0.8471	0.0681
181411007	Granger	St. Joseph	0.0930	0.8889	0.0827	0.8620	0.0802
181411008	South Bend	St. Joseph	0.0880	0.8889	0.0782	0.8622	0.0759
181410010	Potato Creek	St. Joseph	0.0837	0.8853	0.0741	0.8547	0.0715

7.3 LADCO Modeling Analysis for 8-Hour Ozone Standard Assessment

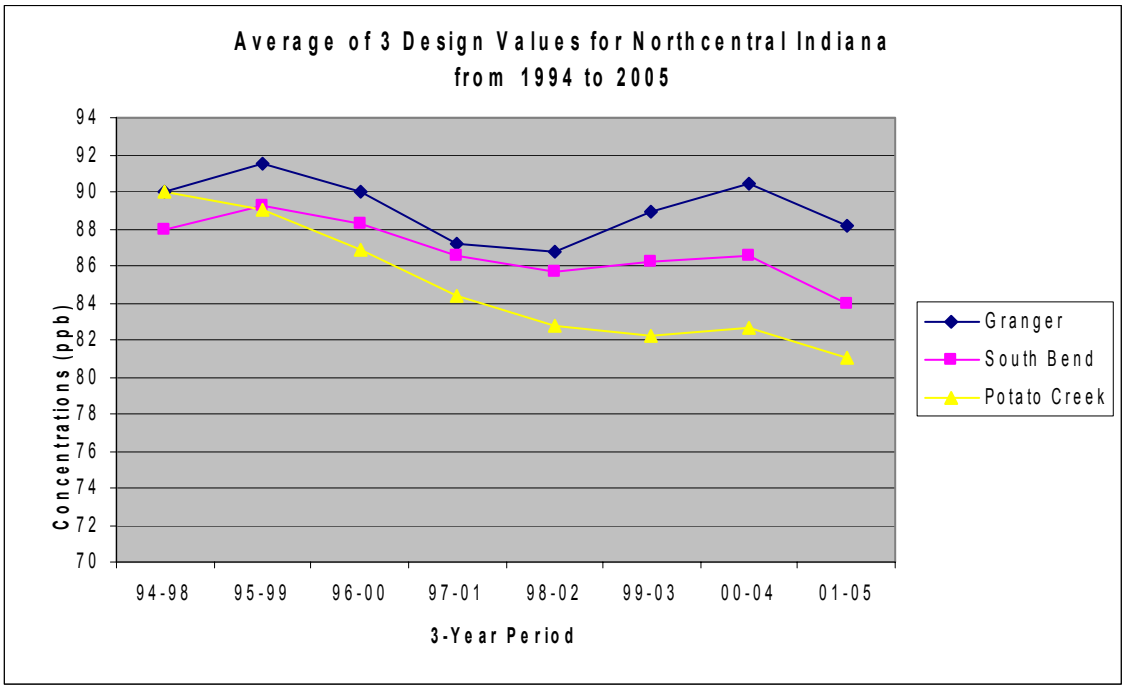
The Lake Michigan Air Directors Consortium (LADCO) performed modeling to evaluate the effect of the NO_x SIP Call and Tier II / Low Sulfur rule for future-year 2007 ozone in the Lake Michigan area. This modeling was originally designed to assess the 1-hour ozone standard. Further analysis was conducted and documented in LADCO's White Paper "8-Hour Ozone Assessment," dated May 2, 2001. Base year design values used were the average of the design values for the three 3-year periods (1994-1996, 1995-1997, and 1996-1998). Base year emissions were taken from 1996 and four ozone episodes were evaluated: June 22-28, 1991; July 14-21, 1991; June 13-25, 1995; and July 7-18, 1995. Results are shown in Table 7.2 below.

Table 7.2 LADCO Modeling Results for 8-Hour Ozone Assessment

Monitor ID	Monitor Name	County	Base Year Average Design Value (ppm)	Future Design Value
			'94-'96, '95-'97, '96-'98	2007
180390002	Bristol	Elkhart	0.087	0.080
181411007	Granger	St. Joseph	0.090	0.082
181411008	South Bend	St. Joseph	0.088	0.079
181410010	Potato Creek	St. Joseph	0.090	0.082

The resulting future year design values were calculated at 0.080 ppm for Elkhart County and 0.082 ppm for St. Joseph County. The modeled future year design values will attain the 8-hour ozone NAAQS of 0.085 ppm with future year concentrations decreasing by 8% to 10%. Base-year average design values (1994-1996, 1995-1997, 1996-1998) used in the LADCO modeling were 0.002 to 0.009 ppm greater than current base -year average design values (2001-2003, 2002-2004, 2003-2005) for most monitors. Therefore, the modeling results would be lower if the current base year average design values were used. Graph 7.1 below shows a comparison of the three base-year average design values over the past twelve years. The trend for the design values at all monitors has dropped over this time period. The Bristol site is not included in Graph 7.1 because it was relocated during one of the analysis periods due to siting problems that caused interference with the monitor results.

Graph 7.1 - Comparison of Design Values from 1994 through 2005



It should be noted that this modeling was conducted in the year 2000 and used 1996 emission inventories. More recent modeling uses updated emissions inventories from 2002 with revised growth factors and control reductions for future year modeling purposes as well as photochemical modeling updates that better characterize ozone formation and transport. These factors would also account for the differences between the older modeling results and current modeling for the NO_x SIP Call and CAIR.

7.4 U.S. EPA Modeling for the Clean Air Interstate Rule (CAIR), 2005

On March 10, 2005, the U.S. EPA finalized the Clean Air Interstate Rule (CAIR). NO_x emissions will be cut from 4.5 million tons in 2003 to a cap of 1.5 million tons by 2009 and 1.3 million tons in 2015 in 28 eastern states and the District of Columbia. U.S. EPA performed modeling to support the associated emission reductions. The modeling was based on 1999 – 2003 design values. Future year modeling was conducted, including for St. Joseph and Elkhart counties, and the future year design values for 2010 and 2015 were evaluated for attainment of the 8-hour ozone NAAQS, as shown below in Table 7.1. Results of the CAIR modeling show that St. Joseph and Elkhart counties will attain the 8-hour ozone NAAQS in 2010 with modeled concentrations below 0.085 ppm. With further reductions projected in CAIR for 2015, all design values continue to decrease and maintain the 8-hour ozone NAAQS.

Table 7.3 Modeling Results from U.S. EPA for the Clean Air Interstate Rule

County	MSA/CMSA	Design Value (ppm)	Future Design Value	Future Design Value
		1999-2003	2010 with CAIR	2015 with CAIR
Elkhart	Elkhart	0.0800	0.0695	0.0658
St. Joseph	South Bend	0.0890	0.0778	0.0740

7.5 LADCO modeling for Clean Air Interstate Rule (CAIR)

LADCO conducted modeling to determine the impact of CAIR in the Midwest. The modeling was based on 2000-2004 design values. Future year modeling for 2009, 2012 and 2018 was conducted and the future year design values were determined, as shown below in Table 7.4.

Table 7.4 LADCO's Round 3 Modeling Results for the Clean Air Interstate Rule

Monitor ID	Monitor Name	County	Design Value 2000-2004	Basecase with CAIR - 2009	Basecase with CAIR – 2012	Basecase with CAIR – 2018
			(ppm)	(ppm)	(ppm)	(ppm)
180390002	Bristol	Elkhart	0.0870	0.0777	0.0765	0.0721
181411007	Granger	St. Joseph	0.0903	0.0803	0.0791	0.0749
181411008	South Bend	St. Joseph	0.0863	0.0777	0.0767	0.0724
181410010	Potato Creek	St. Joseph	0.0827	0.0742	0.0731	0.0685

Results of the CAIR modeling show St. Joseph and Elkhart counties will attain the 8-hour ozone NAAQS of 0.085 ppm by 2009. Future year modeled ozone concentrations for 2009 will be 11% lower than baseline ozone design values, 13% lower in 2012 and 20% lower in 2018. Ozone concentrations are predicted to continue to decrease in 2012 and 2018 and remain in attainment of the 8-hour ozone NAAQS.

7.6 Summary of Existing Modeling Results

U.S. EPA modeling shows that existing national emission control measures have brought St. Joseph and Elkhart counties into attainment of the 8-hour ozone NAAQS. Rulemakings to be implemented in the next several years will provide even greater assurance that air quality will continue to meet the standard into the future. Modeling support for the NO_x SIP Call, Heavy Duty Engine and Highway Diesel Fuel and Tier II/Low Sulfur Fuel and Clean Air Interstate Rule has shown that future year design values for St. Joseph and Elkhart counties will attain the ozone standard with modeled future year design values well below 0.085 ppm. U.S. EPA has modeled base case future years with existing emission controls only and shown that St. Joseph and Elkhart counties will attain the 8-hour ozone NAAQS without proposed additional national emission control strategies. Future national and local emission control strategies will ensure that each county's attainment will be maintained with an increasing margin of safety over time.

7.7 Temperature Analysis for St. Joseph and Elkhart Counties

Meteorological conditions are one of the most important factors that influence ozone development and transport. A temperature analysis has been conducted to determine how the temperatures during the ozone-conducive months of May, June, July, August and September compare to normal temperatures for the North Central Indiana area for the years 1971 through 2000. Temperature information was taken from the National Weather Service Station at South Bend Regional Airport in St. Joseph County and meteorological stations at Goshen Municipal Airport and Waterford Mills in Elkhart County. Available normal maximum temperatures by summer months from 1971-2000 for the South Bend, North Central Indiana area are as follows:

May – 70.7° F
June – 79.6° F
July – 83.1° F
August – 80.7° F
September – 73.6° F
May - September – 77.5 ° F

South Bend's monthly maximum temperatures for the previous 11 years (1995 – 2005) during the summer months are compared to normal summer month temperatures in Table 7.5. Overall, the temperatures during 1995, 1998, 1999, 2002 and 2005 summer months of May, June, July, August, and September were 2% to 4% above normal while temperatures during the 1996, 1997, 2000, 2001, 2003 and 2004 summer months were at normal to 2% lower than the normal temperatures. Table 7.5 shows the average temperatures in North Central Indiana for each of the past nine years and the percent difference from normal for each year.

Table 7.5 Analysis of Maximum Temperatures for St. Joseph and Elkhart Counties
(Percent Change from Maximum Temperature (°F) Normals (1971 – 2000))

	Normal	1995		1996		1997		1998		1999		2000	
	Max	Max	%	Max	%	Max	%	Max	%	Max	%	Max	%
May	70.7	70.7	0	67.7	-4	64.6	-9	77.9	+10	74.3	+5	71.3	+1
June	79.6	83.3	+5	81.2	+2	79.6	0	79.9	0	81.4	+2	76.7	-4
July	83.1	86	+3	82.2	-1	83.7	+1	83.3	0	88.5	+6	79.1	-5
August	80.7	86.4	+7	84.2	+4	78.8	-2	82.2	+2	79.9	-1	80.5	0
September	73.6	76.2	+4	74.3	+1	75.3	+2	79.8	+8	78.1	+6	73.7	0
AVE.	**77.5**	**80.5**	**+4**	**77.9**	**0**	**76.4**	**-1**	**80.6**	**+4**	**80.4**	**+4**	**76.3**	**-2**

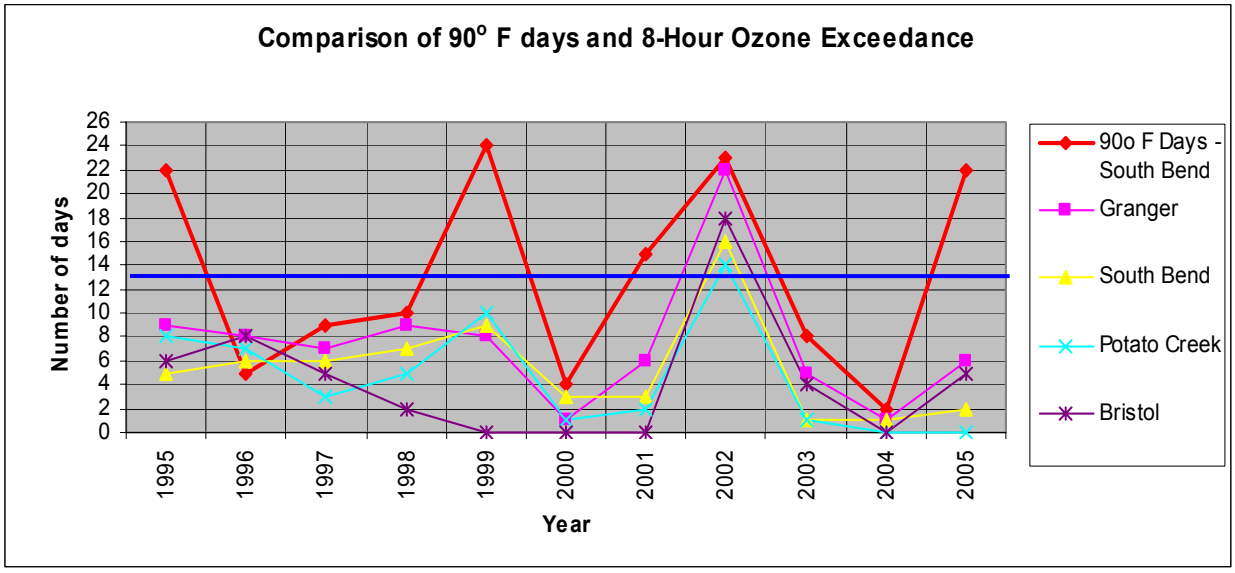
	Normal	2001		2002		2003		2004		2005	
	Max	Max	%	Max	%	Max	%	Max	%	Max	%
May	70.7	71.7	+1	64.6	-9	66.0	-7	72.1	+2	68.5	-3
June	79.6	77.3	-3	81.4	+2	77.6	-3	76.8	-4	84.2	+6
July	83.1	83.1	0	87.2	+5	81.3	-2	80.4	-3	85.5	+3
August	80.7	83.1	+3	82.9	+3	83.2	+3	76.2	-6	83.1	+3
September	73.6	71.8	-2	80.2	+9	71.9	-2	77.5	+5	79.4	+8
AVE.	**77.5**	**77.4**	**0**	**79.3**	**+2**	**76.0**	**-2**	**76.6**	**-1**	**80.1**	**+3**

The number of days with temperatures of 90° F and higher was taken from National Weather Service data from the South Bend Airport and Goshen Municipal Airport and Waterford Mills compared to the normal number of days calculated from 1971 through 2000 as well as the number of 8-hour ozone exceedance days. The normal number of 90° F and higher days for the South Bend area is 13.3. Table 7.6 shows a comparison of 8-hour ozone exceedances and temperatures while Graph 7.2 shows the correlation graphically.

Table 7.6 - Comparison of Days with 90° F and 8-Hour Ozone Exceedance Days

Number of Days with Temperatures of 90° F and higher												
	Normal	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
# of 90° F days	**13.3**	**22**	**5**	**9**	**10**	**24**	**4**	**15**	**23**	**8**	**2**	**22**
Number of 8-Hour Exceedance Days at St. Joseph and Elkhart County ozone monitors												
Monitor	County	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Elkhart	Elkhart	**6**	**8**	**5**	**2**	**0**	**0**	**0**	**18**	**4**	**0**	**5**
South Bend	St. Joseph	**5**	**6**	**6**	**7**	**9**	**3**	**3**	**16**	**1**	**1**	**2**
Granger	St. Joseph	**9**	**8**	**7**	**9**	**8**	**1**	**6**	**22**	**5**	**1**	**6**
Potato Creek	St. Joseph	**8**	**7**	**3**	**5**	**10**	**1**	**2**	**14**	**1**	**0**	**0**

Graph 7.2 - Comparison of Days with 90° F and 8-Hour Ozone Exceedance Days



As can be seen, a greater number of ozone exceedance days per year correlate with a greater number of 90° F days per year. The effects of national control measures appear to have an impact on the number of ozone exceedance days per year. This is evident in that 2005 had a greater number of days with temperatures of 90° F or more but the number of 8-hour exceedance days was low. While other meteorological factors may have influenced this to some degree, it appears that the lower emissions helped to keep 8-hour exceedance days lower during the ozone-conducive conditions of 2005.

7.8 Summary of Meteorological Conditions

The analysis of the departure from normal of the maximum temperatures during the summer months shows variation as illustrated in Table 7.6. The analysis shows that 20 or more days with temperatures of 90^{o} F and higher occurred in 1995, 1999, 2002 and 2005. The number of 8-hour ozone exceedance days for those years shows a greater correlation to the number of higher temperature days. However, the years with fewer 90^{o} F days still yielded 8-hour ozone exceedance days. For example, 1996 through 1998 had a fewer than normal amount of 90^{o} F days; however, there were still a significant number of 8-hour ozone exceedances for those years. In fact, the number of 8-hour ozone exceedances were greater in 1996 than the number of 90^{o} F days. In comparison, 2003 and 2004 were also cooler years, but due to lower emissions than in previous years, there were fewer ozone exceedances. Ozone formation in the future will be influenced less by meteorological conditions. Lower ozone values correspond to lowered local and regional ozone precursor emissions despite ozone-conducive conditions. This is why U.S. EPA developed the 8-hour standard as a 4th high ozone value averaged over 3 years to account for variations in temperature. Despite such variations, ozone values in St. Joseph and Elkhart counties have steadily decreased since 1995.

8.0 CORRECTIVE ACTIONS

8.1 Commitment to Revise Plan

As noted in Section 4.6 above, Indiana hereby commits to review its Maintenance Plan eight (8) years after redesignation, as required by Section 175(A) of the CAAA.

8.2 Commitment for Contingency Measures

Indiana hereby commits to adopt and expeditiously implement necessary corrective actions in the following circumstances:

Warning Level Response:
A Warning Level Response shall be prompted whenever an annual (1-year) fourth high monitored value of 0.089 ppm occurs in a single ozone season, or a two (2)-year average fourth high monitored value of 0.085 parts per million (ppm) or greater occurs within the maintenance area. A Warning Level Response will consist of a study to determine whether the ozone value indicates a trend toward higher ozone values or whether emissions appear to be increasing. The study will evaluate whether the trend, if any, is likely to continue and, if so, the control measures necessary to reverse the trend taking into consideration ease and timing for implementation, as well as economic and social considerations. Implementation of necessary controls in response to a Warning Level Response trigger will take place as expeditiously as possible, but in no event later than twelve (12) months from the conclusion of the most recent ozone season (September 30).

Should it be determined through the Warning Level study that action is necessary to reverse the noted trend, the procedures for control selection and implementation outlined under "Action Level Response" shall be followed.

Action Level Response

An Action Level Response shall be prompted whenever a three (3)-year average fourth high monitored value of 0.085 parts per million (ppm) or greater occurs within the maintenance area. In the event that the Action Level is triggered and is not found to be due to an exceptional event, malfunction, or noncompliance with a permit condition or rule requirement, IDEM will determine additional control measures needed to assure future attainment of NAAQS for ozone. In this case, measures that can be implemented in a short time will be selected in order to be in place within eighteen (18) months from the close of the ozone season that prompted the Action Level.

Control Measure Selection and Implementation

Adoption of any additional control measures is subject to the necessary administrative and legal process. This process will include publication of notices, an opportunity for public hearing, and other measures required by Indiana law for rulemaking by state environmental boards.

If a new measure/control is already promulgated and scheduled to be implemented at the federal or state level, and that measure/control is determined to be sufficient to address the upward trend in air quality, additional local measures may be unnecessary. Furthermore, Indiana will submit to U.S. EPA an analysis to demonstrate the proposed measures are adequate to return the area to attainment.

8.3 Contingency Measures

Contingency measures to be considered will be selected from a comprehensive list of measures deemed appropriate and effective at the time the selection is made. Listed below are example measures that may be considered. The selection of measures will be based upon cost-effectiveness, emission reduction potential, economic and social considerations or other factors that IDEM deems appropriate. IDEM will solicit input from all interested and affected persons in the maintenance area prior to selecting appropriate contingency measures. All of the listed contingency measures are potentially effective or proven methods of obtaining significant reductions of ozone precursor emissions. Because it is not possible at this time to determine what control measure will be appropriate at an unspecified time in the future, the list of contingency measures outlined below is not comprehensive. Indiana anticipates that if contingency measures should ever be necessary, it is unlikely that a significant number (i.e., all those listed below) will be required.

1) Lower-reid vapor pressure gasoline program.

2) Broader geographic applicability of existing measures.

3) Tighten RACT on existing sources covered by US EPA Control Technique Guidelines issued in response to the 1990 CAAA.

4) Apply RACT to smaller existing sources.

5) A modern vehicle inspection/maintenance program.

6) One or more transportation control measures sufficient to achieve at least a half of a percent (0.5%) reduction in actual area wide VOC emissions. Transportation measures will be selected from the following, based upon the factors listed above after consultation with affected local governments:

   a) Trip reduction programs, including, but not limited to, employer-based transportation management plans, area wide rideshare programs, work schedule changes, and telecommuting.

   b) Transit improvements.

   c) Traffic flow improvements.

   d) Other new or innovative transportation measures not yet in widespread use that affects state and local governments deemed appropriate.

7) Alternative fuel and diesel retrofit programs for fleet vehicle operations.

8) Controls on consumer products consistent with those adopted elsewhere in the United States.

9) Require VOC or NO_x emission offsets for new and modified major sources.

10) Require VOC or NO_x emission offsets for new and modified minor sources.

11) Increase the ratio of emission offsets required for new sources.

12) Require VOC or NO_x controls on new minor sources (less than 100 tons).

No contingency measure shall be implemented without providing the opportunity for full public participation during which the relative costs and benefits of individual measures, at the time they are under consideration, can be fully evaluated.

9.0 PUBLIC PARTICIPATION

In accordance with Section 100 (a) (2) of the CAAA, notice of availability of the ozone redesignation documents and the time and date of the public hearing was published in the South Bend Tribune on March 26, 2006, and in the Indianapolis Star, the Goshen News, and the Elkhart Truth on March 28, 2006.

The Public hearing to receive comments on the redesignation request was held on April 27, 2006, at the St. Joseph County Public Library, Humphrey Room, 304 South Main Street, South Bend, Indiana. The public comment period closed on May 3, 2006. A summary of the comments received and IDEM's responses thereto are included in Appendix D as part of the submittal to the US EPA. Appendix D also includes a copy of the public notice, certifications of publication, and the transcript from the public hearing.

10.0 CONCLUSIONS

St. Joseph and Elkhart counties have attained the NAAQS standard for ozone. This petition demonstrates that St. Joseph and Elkhart counties have complied with the applicable provisions of the 1990 Amendments to the Clean Air Act regarding redesignation of basic ozone nonattainment areas. IDEM has prepared a State Implementation and Maintenance Plan that meets the requirements of Section 110(a)(1) of the 1990 Clean Air Act.

Indiana has performed an analysis that shows the air quality improvements are due to permanent and enforceable measures and that significant regional NO_x reductions following implementation of Phase II NO_x and CAIR will ensure continued compliance (maintenance) with the standard. Based on this presentation, St. Joseph and Elkhart counties meet the requirements for redesignation under the CAA and U.S. EPA guidance. Furthermore, because this area is subject to significant transport of pollutants, significant regional NO_x reductions will ensure continued compliance (maintenance) with the standards with an increasing margin of safety.

Consistent with the authority granted to the U.S. EPA, the State of Indiana hereby requests that St. Joseph and Elkhart counties be redesignated to attainment simultaneously with U.S. EPA approval of the Indiana State Implementation and Maintenance Plan provisions contained herein.

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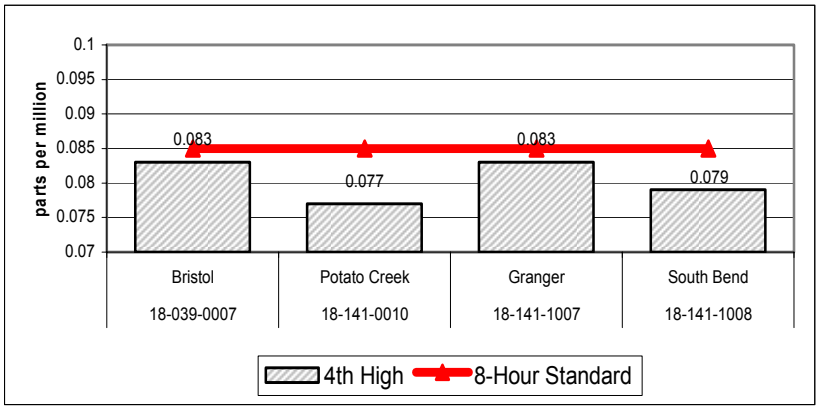
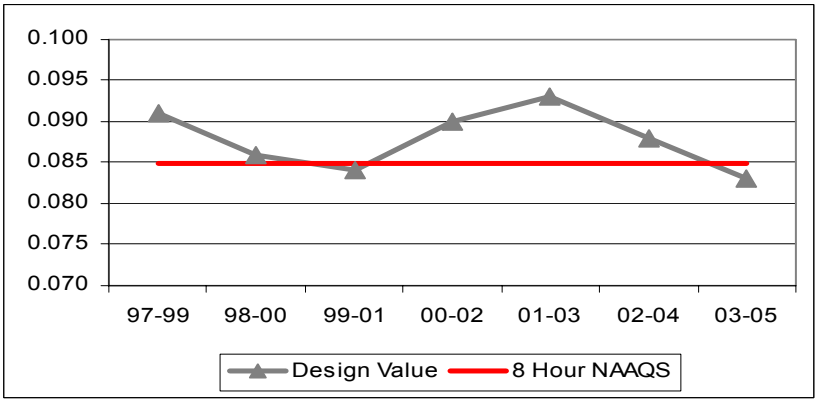
APPENDIX A

Aerometric Information Retrieval System (AIRS) Data

Local Monitoring (Design Value) Data for Elkhart and St. Joseph Counties 2003-2005

SITE ID	COUNTY	ADDRESS	YEAR	%OBS	1ST 8-HR	2ND 8-HR	3RD 8-HR	4TH 8-HR	2003-2005 AVERAGE
18-039-0007	ELKHART	BRISTOL	2003	99	0.093	0.091	0.088	0.087	
18-039-0007	ELKHART	BRISTOL	2004	100	0.08	0.079	0.078	0.077	
18-039-0007	ELKHART	BRISTOL	2005	99	0.094	0.089	0.088	0.086	0.083
18-141-0010	ST.JOSEPH	POTATO CREEK	2003	94	0.094	0.082	0.082	0.081	
18-141-0010	ST.JOSEPH	POTATO CREEK	2004	99	0.079	0.076	0.073	0.073	
18-141-0010	ST.JOSEPH	POTATO CREEK	2005	96	0.081	0.08	0.079	0.078	0.077
18-141-1007	ST.JOSEPH	GRANGER	2003	100	0.097	0.095	0.092	0.086	
18-141-1007	ST.JOSEPH	GRANGER	2004	100	0.091	0.084	0.081	0.076	
18-141-1007	ST.JOSEPH	GRANGER	2005	95	0.096	0.088	0.087	0.086	0.083
18-141-1008	ST.JOSEPH	SOUTH BEND	2003	91	0.095	0.084	0.083	0.082	
18-141-1008	ST.JOSEPH	SOUTH BEND	2004	92	0.087	0.08	0.072	0.072	
18-141-1008	ST.JOSEPH	SOUTH BEND	2005	100	0.092	0.087	0.084	0.084	0.079





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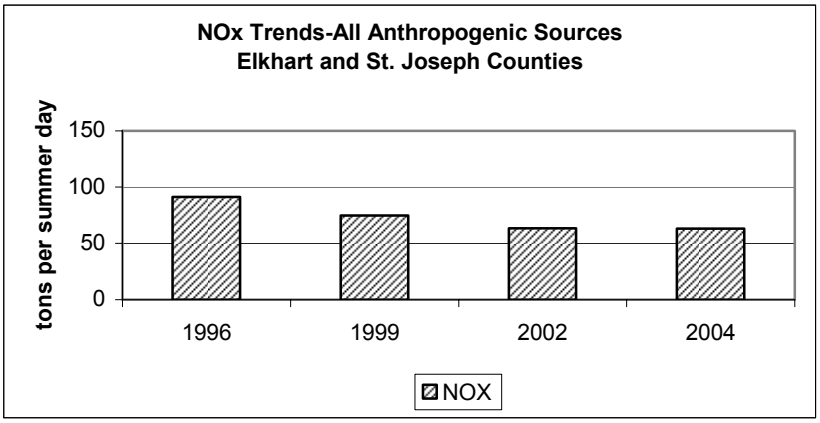
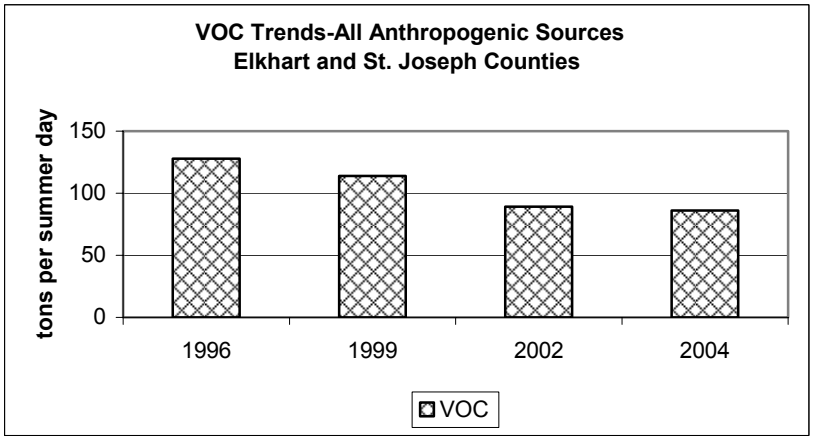
APPENDIX B

Emissions Inventories

TOTAL

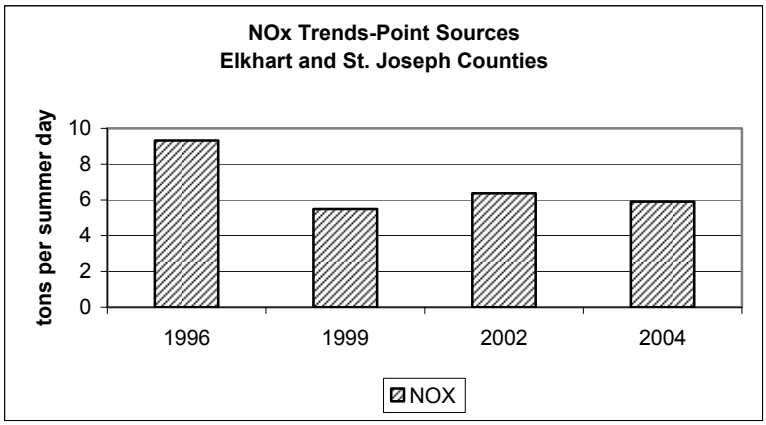
Year	NOX	VOC
1996	91.21	127.88
1999	74.63	113.82
2002	63.40	89.18
2004	63.17	85.98

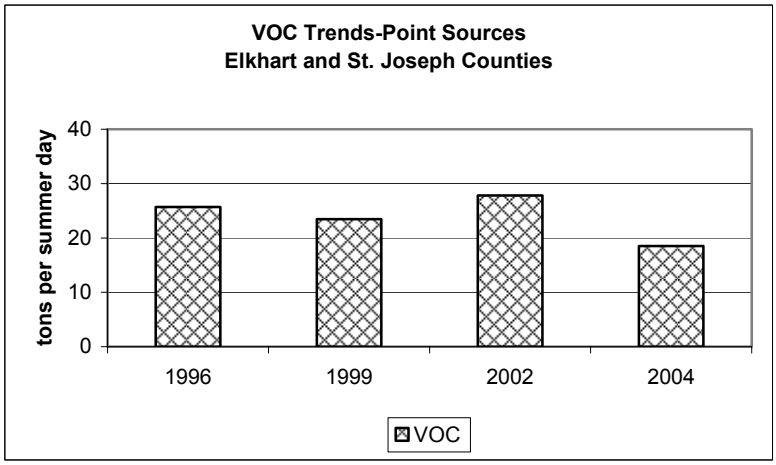




POINT

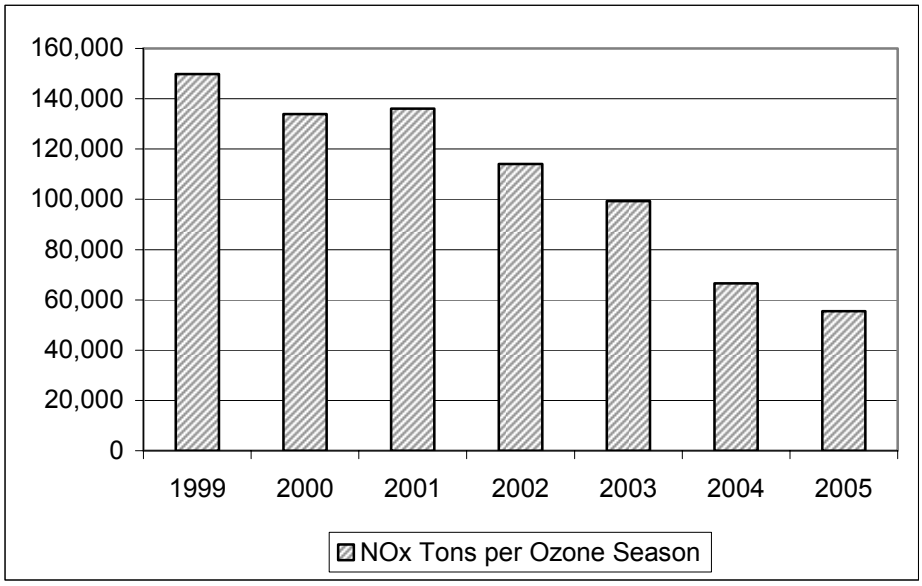
Year	NOX	VOC
1996	9.32	25.66
1999	5.50	23.46
2002	6.36	27.80
2004	5.90	18.51





STATEWIDE EGU NOx TRENDS

Year	NOx Tons per Ozone Season
1999	149,827
2000	133,881
2001	136,052
2002	113,996
2003	99,283
2004	66,568
2005	55,486



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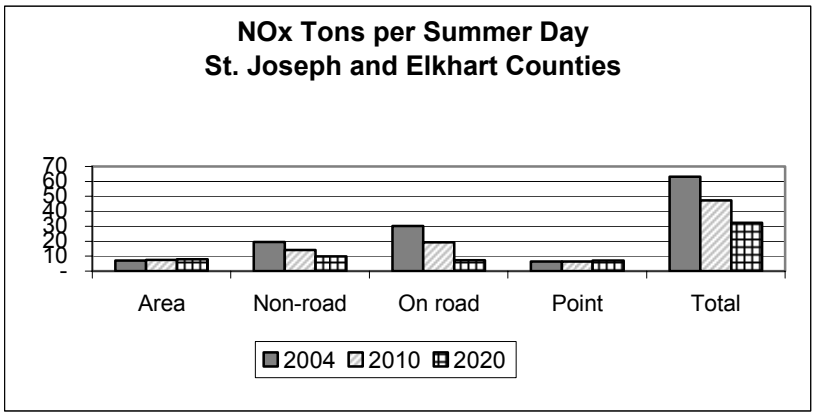
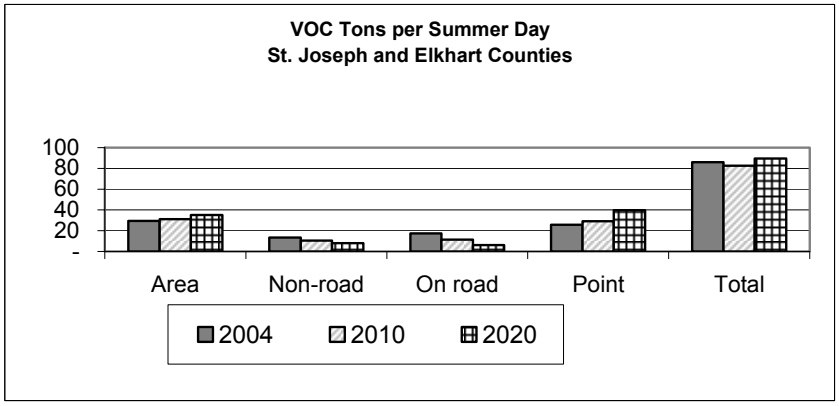
APPENDIX C

2010 AND 2020 Projected Emissions Inventory

Sector	Nox 2004	NOX 2010	NOX 2020
Area	7.13	7.54	7.98
Nonroad	19.56	14.06	9.78
On road	30.11	19.29	7.35
Point	5.90	6.32	7.17
Total	62.70	47.21	32.28
Sector	**VOC 2004**	**VOC 2010**	**VOC 2020**
Area	29.43	31.15	35.20
Nonroad	13.40	10.47	8.06
On road	17.52	11.56	6.26
Point	25.63	29.16	39.78
Total	**85.98**	**82.34**	**89.30**





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APPENDIX D

Public Participation Documentation

LEGAL NOTICE OF PUBLIC HEARING
Redesignation Petition and Maintenance Plan
in association with the 8 hour ozone standard,
for St. Joseph/Elkhart Counties.

Notice is hereby given under 40 CFR 51.102 that the Indiana Department of Environmental Management (IDEM) will hold a public hearing on Thursday, April 27, 2006. The purpose of this hearing is to receive public comment on the Draft Redesignation Petition and Maintenance Plan in association with the 8 hour ozone standard, for St. Joseph/Elkhart County. The meeting will convene at 6:00 p.m. (local time) in the St. Joseph County Public Library, Humphreys Room, 304 South Main Street, South Bend, Indiana. All interested persons are invited and will be given opportunity to express their views concerning the draft documents.

This Redesignation Petition and Maintenance Plan is being drafted and submitted consistent with United States Environmental Protection Agency (USEPA) guidance.

Copies of the draft documents will be available on or before March 28, 2006 to any person upon request and at the following locations:

- Indiana Department of Environmental Management, Office of Air Quality, Indiana Government Center North, 100 North Senate, Room N1003, Indianapolis, Indiana.
- St. Joseph County Public Library, 304 South Main Street, South Bend, Indiana.
- Elkhart Public Library, 300 South Second Street, Elkhart, Indiana
- Goshen Public Library, 601 South 5th Street, Goshen, Indiana
- Mishawaka-Penn-Harris Public Library, 209 Lincoln Way East, Mishawaka, Indiana
- Northern Regional Office, 220 West Colfax Avenue, Suite 200, South Bend, Indiana

Oral statements will be heard, but for the accuracy of the record, statements should be submitted in writing. Written statements may be submitted to the attendant designated to receive written comments at the public hearing.

IDEM will also accept written comments through Wednesday, May 3, 2006. Mailed comments should be addressed to:

St. Joseph/Elkhart Counties Redesignation Petition and Maintenance Plan
Kathryn Watson, Chief

Air Programs Branch, Office of Air Quality – Mail Code 61-50
100 North Senate Avenue
Indiana Department of Environmental Management
Indianapolis, IN 46206-2251

A transcript of the hearing and all written submissions provided at the public hearing shall be open to public inspection at IDEM and copies may be made available to any person upon payment of reproduction costs. Any person heard or represented at the hearing or requesting notice shall be given written notice of actions resulting from the hearing.

For additional information contact Mr. Laurence Brown, at the Indiana Department of Environmental Management, Office of Air Quality, Room 1001, Indiana Government Center North, 100 North Senate Avenue, Indianapolis or call (317) 234-3097 or (800) 451-6027 ext. 4-3097 (in Indiana).

Kathryn Watson, Chief
Air Programs Branch
Office of Air Quality

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Individuals requiring reasonable accommodations for participation in this hearing should contact the IDEM Americans with Disabilities Act (ADA) coordinator at:

Attn: ADA Coordinator
Indiana Department of Environmental Management – Mail Code 50-10
100 North Senate Avenue
Indianapolis, IN 46204-2251

Or call (317) 233-1785 (voice) or (317) 232-6565 (TDD). Please provide a minimum of 72 hours notification.

SUMMARY OF PUBLIC HEARING COMMENTS AND RESPONSES

Legend:

- Public Comment

- IDEM Response

Kyle Hannon, Greater Elkhart Chamber of Commerce

- The Greater Elkhart Chamber of Commerce supports the redesignation petition.
- IDEM appreciates the support.
- The area has met the ozone and PM2.5 standards at the same time that production in increasing in the county.
- IDEM agrees.
- Companies are paying attention and controls are working.
- IDEM agrees.

Terry Miller, St. Joseph County Chamber of Commerce

- The St. Joseph County Chamber of Commerce supports the redesignation petition.
- IDEM appreciates the support.
- We are all aware that ozone transporting into the county needs to be addressed.
- Regional rules such as the NO_x SIP Call trading program and the Clean Air Interstate Rule for NO_x and SO_2 will continue to address regional transport of ozone.
- As the full impact of regulations go into affect in Chicago and Illinois, it will keep the area in compliance.
- IDEM agrees that the emissions of ozone precursors shall be reduced as noted in the previous response (above) and also from the turnover of cars and trucks due to more strict regulations on tailpipe emissions for newer vehicles.

WRITTEN COMMENTS:

Letter (April 27, 2006) from Philip E. Penn, The Greater Elkhart Chamber of Commerce

- We strongly support the change from nonattainment status for the area.
- IDEM appreciates the support.
- The summer was hot and factory production increased and the ozone average fell below 85 ppb as a result of area companies' hard work and cooperation with IDEM. The Chamber's Environmental Council meets monthly and includes discussions on pollution prevention ideas. An annual Environmental Conference exposes environmental managers to the latest pollution prevention information. Area companies contribute and support Ozone Action Days. Local efforts and diesel regulations have helped.

- IDEM agrees and appreciates the support and cooperation.

END OF COMMENTS

APPENDIX E

MOBILE6-Related Files

Vehicle Age Distribution

RegData.d

```
REG DIST
*
* This file contains the default MOBILE6 values for the distribution of
* vehicles by age for July of any calendar year.  There are sixteeen (16)
* sets of values representing 16 combined gasoline/diesel vehicle class
* distributions.  These distributions are split for gasoline and diesel
* using the separate input (or default) values for diesel sales fractions.
* Each distribution contains 25 values which represent the fraction of
* all vehicles in that class (gasoline and diesel) of that age in July.
* The first number is for age 1 (calendar year minus model year plus one)
* and the last number is for age 25.  The last age includes all vehicles
* of age 25 or older.  The first number in each distribution is an integer
* which indicates which of the 16 vehicle classes are represented by the
* distribution.  The sixteen vehicle classes are:
*
*  1  LDV    Light-Duty Vehicles (Passenger Cars)
*  2  LDT1   Light-Duty Trucks 1 (0-6,000 lbs. GVWR, 0-3750 lbs. LVW)
*  3  LDT2   Light Duty Trucks 2 (0-6,001 lbs. GVWR, 3751-5750 lbs. LVW)
*  4  LDT3   Light Duty Trucks 3 (6,001-8500 lbs. GVWR, 0-3750 lbs. LVW)
*  5  LDT4   Light Duty Trucks 4 (6,001-8500 lbs. GVWR, 3751-5750 lbs. LVW)
*  6  HDV2B  Class 2b Heavy Duty Vehicles (8501-10,000 lbs. GVWR)
*  7  HDV3   Class 3 Heavy Duty Vehicles (10,001-14,000 lbs. GVWR)
*  8  HDV4   Class 4 Heavy Duty Vehicles (14,001-16,000 lbs. GVWR)
*  9  HDV5   Class 5 Heavy Duty Vehicles (16,001-19,500 lbs. GVWR)
* 10  HDV6   Class 6 Heavy Duty Vehicles (19,501-26,000 lbs. GVWR)
* 11  HDV7   Class 7 Heavy Duty Vehicles (26,001-33,000 lbs. GVWR)
* 12  HDV8A  Class 8a Heavy Duty Vehicles (33,001-60,000 lbs. GVWR)
* 13  HDV8B  Class 8b Heavy Duty Vehicles (>60,000 lbs. GVWR)
* 14  HDBS   School Busses
* 15  HDBT   Transit and Urban Busses
* 16  MC     Motorcycles (All)
*
* The 25 age values are arranged in two rows of 10 values followed by a row
* with the last 5 values.  Comments (such as this one) are indicated by
* an asterisk in the first column. Empty rows are ignored.  Values are
* read "free format," meaning any number may appear in any row with as
* many characters as needed (including a decimal) as long as 25 values
* follow the initial integer value separated by a space.
*
* If all 28 vehicle classes do not need to be altered from the default
* values, then only the vehicle classes that need to be changed need to
* be included in this file.  The order in which the vehicle classes are
* read does not matter, however each vehicle class set must contain 25
* values and be in the proper age order.
*
* LDV
 1 0.0405 0.0541 0.0540 0.0559 0.0671 0.0682 0.0599 0.0660 0.0593 0.0677
   0.0571 0.0550 0.0528 0.0457 0.0399 0.0382 0.0293 0.0220 0.0178 0.0129
   0.0091 0.0044 0.0028 0.0023 0.0181
* LDT1
 2 0.0398 0.0531 0.0530 0.0329 0.0286 0.0223 0.0330 0.0248 0.0506 0.0548
   0.0686 0.0546 0.0466 0.0645 0.0503 0.0661 0.0569 0.0605 0.0445 0.0347
   0.0196 0.0095 0.0083 0.0066 0.0160
```

```
* LDT2
 3 0.0552 0.0736 0.0734 0.0717 0.0963 0.0908 0.0995 0.0892 0.0639 0.0574
   0.0530 0.0443 0.0343 0.0241 0.0169 0.0151 0.0167 0.0048 0.0052 0.0042
   0.0038 0.0024 0.0011 0.0008 0.0061
* LDT3
 4 0.0449 0.0598 0.0597 0.0559 0.0759 0.0939 0.0571 0.0593 0.0552 0.0671
   0.0568 0.0473 0.0336 0.0225 0.0280 0.0291 0.0281 0.0222 0.0171 0.0152
   0.0121 0.0070 0.0042 0.0025 0.0455
* LDT4
 5 0.0679 0.0905 0.0903 0.0863 0.0917 0.1214 0.0892 0.0734 0.0509 0.0521
   0.0560 0.0169 0.0167 0.0058 0.0098 0.0043 0.0074 0.0040 0.0064 0.0066
   0.0037 0.0015 0.0009 0.0002 0.0460
```

MOBILE6 Command Files

2004

```
*****************************************************************************
**
*
* Generated By:    [redacted]
*
* Date Created:   Thu Jan 12 09:51:37 2006
*
* File Directory: F:\TransCAD\2030LRP\2004\Build
*
*****************************************************************************
**

MOBILE6 INPUT FILE : F:\TransCAD\2030LRP\2004\Build\Inputs\1HrOzone.in

REPORT FILE        : F:\TransCAD\2030LRP\2004\Build\Outputs\1HrOzone.out
SPREADSHEET        : F:\TransCAD\2030LRP\2004\Build\Outputs\1HrOzone.tab

POLLUTANTS         : HC CO NOx

*****************************************************************************
**
RUN DATA           :
*****************************************************************************
**

EXPRESS HC AS VOC  :

NO REBUILD         :
NO REFUELING       :

REG DIST           : F:\TransCAD\Mobile\RegData.d

MIN/MAX TEMP       : 62.8 83.7

FUEL RVP           : 9.0

*****************************************************************************
**
SCENARIO RECORD    : Scenario Title: 2004 Rural Interstate
```

```
*******************************************************************************
**

CALENDAR YEAR      : 2004
EVALUATION MONTH   : 7

AVERAGE SPEED      : 60.7 Freeway

*******************************************************************************
**
SCENARIO RECORD    : Scenario Title: 2004 Other Rural Principal Arterial
*******************************************************************************
**

CALENDAR YEAR      : 2004
EVALUATION MONTH   : 7

AVERAGE SPEED      : 39.3 Non-Ramp

*******************************************************************************
**
SCENARIO RECORD    : Scenario Title: 2004 Minor Rural Arterial
*******************************************************************************
**

CALENDAR YEAR      : 2004
EVALUATION MONTH   : 7

AVERAGE SPEED      : 44.9 Arterial

*******************************************************************************
**
SCENARIO RECORD    : Scenario Title: 2004 Major Rural Collector
*******************************************************************************
**

CALENDAR YEAR      : 2004
EVALUATION MONTH   : 7

AVERAGE SPEED      : 34.2 Arterial

*******************************************************************************
**
SCENARIO RECORD    : Scenario Title: 2004 Minor Rural Collector
*******************************************************************************
**

CALENDAR YEAR      : 2004
EVALUATION MONTH   : 7

AVERAGE SPEED      : 35.1 Arterial

*******************************************************************************
**
SCENARIO RECORD    : Scenario Title: 2004 Rural Local Road
*******************************************************************************
**
```

```
CALENDAR YEAR      : 2004
EVALUATION MONTH   : 7

AVERAGE SPEED      : 34.3 Local

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2004 Urban Interstate
**********************************************************************
**

CALENDAR YEAR      : 2004
EVALUATION MONTH   : 7

AVERAGE SPEED      : 60.7 Freeway

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2004 Other Urban Freeways and Expressways
**********************************************************************
**

CALENDAR YEAR      : 2004
EVALUATION MONTH   : 7

AVERAGE SPEED      : 42.6 Freeway

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2004 Other Urban Principal Arterial
**********************************************************************
**

CALENDAR YEAR      : 2004
EVALUATION MONTH   : 7

AVERAGE SPEED      : 30.6 Arterial

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2004 Other Urban Minor Arterial
**********************************************************************
**

CALENDAR YEAR      : 2004
EVALUATION MONTH   : 7

AVERAGE SPEED      : 30.5 Arterial

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2004 Urban Collector
**********************************************************************
**

CALENDAR YEAR      : 2004
EVALUATION MONTH   : 7
```

```
AVERAGE SPEED      : 30.4 Arterial

*********************************************************************************
**
SCENARIO RECORD    : Scenario Title: 2004 Urban Local Road
*********************************************************************************
**

CALENDAR YEAR      : 2004
EVALUATION MONTH   : 7

AVERAGE SPEED      : 31.4 Local

*********************************************************************************
**
END OF RUN         :
```

2009

```
*********************************************************************************
**
*
* Generated By:    [redacted]
*
* Date Created:   Thu Jan 12 10:00:08 2006
*
* File Directory: F:\TransCAD\2030LRP\2009\Build
*
*********************************************************************************
**

MOBILE6 INPUT FILE : F:\TransCAD\2030LRP\2009\Build\Inputs\1HrOzone.in

REPORT FILE        : F:\TransCAD\2030LRP\2009\Build\Outputs\1HrOzone.out
SPREADSHEET        : F:\TransCAD\2030LRP\2009\Build\Outputs\1HrOzone.tab

POLLUTANTS         : HC CO NOx

*********************************************************************************
**
RUN DATA           :
*********************************************************************************
**

EXPRESS HC AS VOC  :

NO REBUILD         :
NO REFUELING       :

REG DIST           : F:\TransCAD\Mobile\RegData.d

MIN/MAX TEMP       : 62.8 83.7

FUEL RVP           : 9.0

*********************************************************************************
**
SCENARIO RECORD    : Scenario Title: 2009 Rural Interstate
```

```
*********************************************************************
**

CALENDAR YEAR      : 2009
EVALUATION MONTH   : 7

AVERAGE SPEED      : 60.7 Freeway

*********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2009 Other Rural Principal Arterial
*********************************************************************
**

CALENDAR YEAR      : 2009
EVALUATION MONTH   : 7

AVERAGE SPEED      : 38.8 Non-Ramp

*********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2009 Minor Rural Arterial
*********************************************************************
**

CALENDAR YEAR      : 2009
EVALUATION MONTH   : 7

AVERAGE SPEED      : 44.8 Arterial

*********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2009 Major Rural Collector
*********************************************************************
**

CALENDAR YEAR      : 2009
EVALUATION MONTH   : 7

AVERAGE SPEED      : 34.2 Arterial

*********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2009 Minor Rural Collector
*********************************************************************
**

CALENDAR YEAR      : 2009
EVALUATION MONTH   : 7

AVERAGE SPEED      : 35.1 Arterial

*********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2009 Rural Local Road
*********************************************************************
**
```

```
CALENDAR YEAR      : 2009
EVALUATION MONTH   : 7

AVERAGE SPEED      : 34.2 Local

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2009 Urban Interstate
**********************************************************************
**

CALENDAR YEAR      : 2009
EVALUATION MONTH   : 7

AVERAGE SPEED      : 60.7 Freeway

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2009 Other Urban Freeways and Expressways
**********************************************************************
**

CALENDAR YEAR      : 2009
EVALUATION MONTH   : 7

AVERAGE SPEED      : 43.2 Freeway

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2009 Other Urban Principal Arterial
**********************************************************************
**

CALENDAR YEAR      : 2009
EVALUATION MONTH   : 7

AVERAGE SPEED      : 30.9 Arterial

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2009 Other Urban Minor Arterial
**********************************************************************
**

CALENDAR YEAR      : 2009
EVALUATION MONTH   : 7

AVERAGE SPEED      : 30.6 Arterial

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2009 Urban Collector
**********************************************************************
**

CALENDAR YEAR      : 2009
EVALUATION MONTH   : 7
```

```
AVERAGE SPEED      : 30.4 Arterial

*********************************************************************************
**
SCENARIO RECORD    : Scenario Title: 2009 Urban Local Road
*********************************************************************************
**

CALENDAR YEAR      : 2009
EVALUATION MONTH   : 7

AVERAGE SPEED      : 31.5 Local

*********************************************************************************
**
END OF RUN         :
```

2020

```
*********************************************************************************
**
*
* Generated By:    [redacted]
*
* Date Created:   Thu Jan 12 10:00:50 2006
*
* File Directory: F:\TransCAD\2030LRP\2020\Build
*
*********************************************************************************
**

MOBILE6 INPUT FILE : F:\TransCAD\2030LRP\2020\Build\Inputs\1HrOzone.in

REPORT FILE        : F:\TransCAD\2030LRP\2020\Build\Outputs\1HrOzone.out
SPREADSHEET        : F:\TransCAD\2030LRP\2020\Build\Outputs\1HrOzone.tab

POLLUTANTS         : HC CO NOx

*********************************************************************************
**
RUN DATA           :
*********************************************************************************
**

EXPRESS HC AS VOC  :

NO REBUILD         :
NO REFUELING       :

REG DIST           : F:\TransCAD\Mobile\RegData.d

MIN/MAX TEMP       : 62.8 83.7

FUEL RVP           : 9.0

*********************************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Rural Interstate
```

```
*******************************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 60.7 Freeway

*******************************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Other Rural Principal Arterial
*******************************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 40.7 Non-Ramp

*******************************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Minor Rural Arterial
*******************************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 46.1 Arterial

*******************************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Major Rural Collector
*******************************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 34.1 Arterial

*******************************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Minor Rural Collector
*******************************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 34.9 Arterial

*******************************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Rural Local Road
*******************************************************************************
**
```

```
CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 36.6 Local

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Urban Interstate
**********************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 60.7 Freeway

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Other Urban Freeways and Expressways
**********************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 43 Freeway

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Other Urban Principal Arterial
**********************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 31.5 Arterial

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Other Urban Minor Arterial
**********************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 30.9 Arterial

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Urban Collector
**********************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7
```

```
AVERAGE SPEED      : 30.5 Arterial

*******************************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Urban Local Road
*******************************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 31.5 Local

*******************************************************************************
**
END OF RUN         :
```

2020 No build

```
*******************************************************************************
**
*
* Generated By:    [redacted]
*
* Date Created:   Thu Jan 12 10:00:50 2006
*
* File Directory: F:\TransCAD\2030LRP\2020\NoBuild
*
*******************************************************************************
**

MOBILE6 INPUT FILE : 2020nb.in

REPORT FILE        : 2020nb.out
SPREADSHEET        : 2020nb.tab

POLLUTANTS         : HC CO NOx

*******************************************************************************
**
RUN DATA           :
*******************************************************************************
**

EXPRESS HC AS VOC  :

NO REBUILD         :
NO REFUELING       :

REG DIST           : RegData.d

MIN/MAX TEMP       : 62.8 83.7

FUEL RVP           : 9.0

*******************************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Rural Interstate
```

```
**********************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 60.7 Freeway

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Other Rural Principal Arterial
**********************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 37.5 Non-Ramp

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Minor Rural Arterial
**********************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 43.5 Arterial

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Major Rural Collector
**********************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 33.6 Arterial

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Minor Rural Collector
**********************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 34.9 Arterial

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Rural Local Road
**********************************************************************
**
```

```
CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 34.0 Local

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Urban Interstate
**********************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 60.7 Freeway

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Other Urban Freeways and Expressways
**********************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 42.2 Freeway

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Other Urban Principal Arterial
**********************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 29.6 Arterial

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Other Urban Minor Arterial
**********************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 29.7 Arterial

**********************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Urban Collector
**********************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7
```

```
AVERAGE SPEED      : 29.9 Arterial

*********************************************************************************
**
SCENARIO RECORD    : Scenario Title: 2020 Urban Local Road
*********************************************************************************
**

CALENDAR YEAR      : 2020
EVALUATION MONTH   : 7

AVERAGE SPEED      : 31.1 Local

*********************************************************************************
**
END OF RUN         :
```

MOBILE6 Emission Factor Output Files

The following output files were recreated by IDEM using the input files provided by MACOG, above. However, the file names may be inconsistent from the input files due to filename changes for consistency with IDEM's MOBILE6 naming conventions. The resulting emission factors are identical.

2004

```
************************************************************************
* MOBILE6.2.01 (31-Oct-2002)                                           *
* Input file: 8HR2004.IN (file 1, run 1).                              *
************************************************************************
  M603 Comment:
               User has disabled the calculation of REFUELING emissions.


* Reading Registration Distributions from the following external
* data file: REGDATA.D
  M 49 Warning:
                  1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                  1.00     MYR sum not = 1. (will normalize)

* # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2004 Rural Interstate

* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M515 Warning:
            The combined freeway and ramp average speed entered
            cannot be greater than 60.7 miles per hour.
            The average speed will be reset to this value.
  M582 Warning:
            The user supplied freeway average speed of 60.7
            will be used for all hours of the day. 100% of VMT
            has been assigned to a fixed combination of freeways
            and freeway ramps for all hours of the day and all
             vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
 NO HDDV DEFEAT DEVICE REBUILD PROGRAM IN EFFECT.

                    Calendar Year:  2004
                            Month:  July
                         Altitude:  Low
               Minimum Temperature:  62.8 (F)
               Maximum Temperature:  83.7 (F)
                 Absolute Humidity:   75. grains/lb
                  Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
               Fuel Sulfur Content:  121. ppm

               Exhaust I/M Program:  No
```

```
                Evap I/M Program:  No
                     ATP Program:  No
                Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                 <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4145    0.3328    0.1212              0.0368    0.0006    0.0018    0.0862    0.0059    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      1.239     1.016     1.342     1.103     1.022     0.542     0.549     0.380      2.41     1.100
    Composite CO  :     19.55     20.57     23.58     21.38     18.81     1.580     1.112     2.674     21.32    18.862
    Composite NOX :      1.188     1.375     1.699     1.462     5.480     2.445     2.190    21.556      1.70     3.233
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2004 Other Rural Principal Arterial

* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M581 Warning:
            The user supplied freeway average speed of 39.3
            will be used for all hours of the day. 100% of VMT
            has been assigned to the freeway roadway type for
            all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2004
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  62.8 (F)
                Maximum Temperature:  83.7 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:  121. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                 <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4145    0.3328    0.1212              0.0368    0.0006    0.0018    0.0862    0.0059    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      1.392     1.146     1.505     1.242     1.233     0.598     0.620     0.466      1.93     1.240
    Composite CO  :     15.41     16.52     19.35     17.28     12.56     1.467     1.014     2.257      9.87    14.952
    Composite NOX :      1.093     1.251     1.569     1.336     4.667     1.348     1.193    13.696      1.22     2.423
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2004 Minor Rural Arterial

* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 44.9
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2004
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  62.8 (F)
                Maximum Temperature:  83.7 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:  121. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
```

```
              GVWR:              <6000     >6000     (All)
                      ------     ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4145    0.3328    0.1212              0.0368    0.0006    0.0018    0.0862    0.0059    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      1.344     1.108     1.459     1.201     1.134     0.569     0.583     0.421      1.87     1.193
     Composite CO  :     16.24     17.36     20.23     18.13     12.17     1.428     0.981     2.115      9.09    15.650
     Composite NOX :      1.109     1.273     1.591     1.358     4.861     1.431     1.269    11.523      1.25     2.260
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2004 Major Rural Collector

* File 1, Run 1, Scenario 4.
* # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 34.2
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2004
                           Month:  July
                        Altitude:  Low
              Minimum Temperature:  62.8 (F)
              Maximum Temperature:  83.7 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:  121. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

        Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
                GVWR:              <6000     >6000     (All)
                      ------     ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4145    0.3328    0.1212              0.0368    0.0006    0.0018    0.0862    0.0059    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      1.448     1.190     1.559     1.289     1.364     0.636     0.667     0.522      2.02     1.294
     Composite CO  :     14.73     15.82     18.62     16.57     13.71     1.536     1.074     2.513     11.01    14.421
     Composite NOX :      1.088     1.241     1.561     1.326     4.489     1.321     1.169    10.698      1.19     2.151
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2004 Minor Rural Collector

* File 1, Run 1, Scenario 5.
* # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 35.1
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2004
                           Month:  July
                        Altitude:  Low
              Minimum Temperature:  62.8 (F)
              Maximum Temperature:  83.7 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:  121. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

        Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
                GVWR:              <6000     >6000     (All)
                      ------     ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4145    0.3328    0.1212              0.0368    0.0006    0.0018    0.0862    0.0059    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
```

```
    Composite VOC :      1.436     1.180     1.545     1.277     1.337     0.628     0.658     0.511      2.00     1.282
    Composite CO  :     14.78     15.87     18.67     16.62     13.42     1.520     1.061     2.454     10.77    14.444
    Composite NOX :      1.085     1.238     1.558     1.324     4.518     1.320     1.168    10.692      1.19     2.149
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2004 Rural Local Road

* File 1, Run 1, Scenario 6.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M585 Warning:
           100% of VMT has been assigned to the local roadway
           type for all hours of the day for all vehicle types
           with an average speed of 12.9 mph.
  M 48 Warning:
            there are no sales for vehicle class HDGV8b

                 Calendar Year:  2004
                         Month:  July
                      Altitude:  Low
            Minimum Temperature:  62.8 (F)
            Maximum Temperature:  83.7 (F)
              Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
            Fuel Sulfur Content:  121. ppm

            Exhaust I/M Program:  No
               Evap I/M Program:  No
                    ATP Program:  No
               Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                 <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4145    0.3328    0.1212              0.0368    0.0006    0.0018    0.0862    0.0059    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      2.219     1.872     2.376     2.007     3.178     1.005     1.133     1.084      3.06     2.062
    Composite CO  :     13.37     15.06     18.16     15.88     36.59     2.641     2.025     6.563     24.94    14.822
    Composite NOX :      1.092     1.207     1.524     1.291     3.738     1.766     1.573    12.147      0.96     2.234
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2004 Urban Interstate

* File 1, Run 1, Scenario 7.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M515 Warning:
           The combined freeway and ramp average speed entered
           cannot be greater than 60.7 miles per hour.
           The average speed will be reset to this value.
  M582 Warning:
           The user supplied freeway average speed of 60.7
           will be used for all hours of the day. 100% of VMT
           has been assigned to a fixed combination of freeways
           and freeway ramps for all hours of the day and all
            vehicle types.
  M 48 Warning:
            there are no sales for vehicle class HDGV8b

                 Calendar Year:  2004
                         Month:  July
                      Altitude:  Low
            Minimum Temperature:  62.8 (F)
            Maximum Temperature:  83.7 (F)
              Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
            Fuel Sulfur Content:  121. ppm

            Exhaust I/M Program:  No
               Evap I/M Program:  No
                    ATP Program:  No
               Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                 <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4145    0.3328    0.1212              0.0368    0.0006    0.0018    0.0862    0.0059    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      1.239     1.016     1.342     1.103     1.022     0.542     0.549     0.380      2.41     1.100
```

```
    Composite CO  :     19.55     20.57     23.58     21.38     18.81     1.580     1.112     2.674     21.32    18.862
    Composite NOX :      1.188     1.375     1.699     1.462     5.480     2.445     2.190    21.556      1.70     3.233
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2004 Other Urban Freeways and Expressways

* File 1, Run 1, Scenario 8.
* # # # # # # # # # # # # # # # # # # # # # # # # # #
  M582 Warning:
            The user supplied freeway average speed of 42.6
            will be used for all hours of the day. 100% of VMT
            has been assigned to a fixed combination of freeways
            and freeway ramps for all hours of the day and all
             vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2004
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  62.8 (F)
                Maximum Temperature:  83.7 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:  121. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4145    0.3328    0.1212              0.0368    0.0006    0.0018    0.0862    0.0059    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      1.375     1.135     1.491     1.230     1.172     0.580     0.597     0.438      1.89     1.222
    Composite CO  :     16.60     17.58     20.45     18.35     12.35     1.443     0.994     2.172      9.39    15.913
    Composite NOX :      1.122     1.287     1.608     1.373     4.790     1.403     1.243    13.762      1.24     2.462
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2004 Other Urban Principal Arterial

* File 1, Run 1, Scenario 9.
* # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 30.6
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2004
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  62.8 (F)
                Maximum Temperature:  83.7 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:  121. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4145    0.3328    0.1212              0.0368    0.0006    0.0018    0.0862    0.0059    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      1.507     1.239     1.621     1.341     1.490     0.670     0.711     0.575      2.11     1.352
    Composite CO  :     14.60     15.66     18.47     16.41     15.08     1.612     1.139     2.789     12.10    14.374
    Composite NOX :      1.107     1.255     1.577     1.341     4.362     1.329     1.176    10.760      1.15     2.166
  ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2004 Other Urban Minor Arterial

* File 1, Run 1, Scenario 10.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 30.5
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2004
                           Month:  July
                        Altitude:  Low
                Minimum Temperature:  62.8 (F)
                Maximum Temperature:  83.7 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:  121. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4145    0.3328    0.1212              0.0368    0.0006    0.0018    0.0862    0.0059    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      1.509     1.240     1.623     1.343     1.494     0.671     0.712     0.576      2.11     1.354
     Composite CO  :      14.60     15.65     18.46     16.40     15.13     1.614     1.141     2.797     12.14     14.372
     Composite NOX :      1.108     1.255     1.577     1.341     4.358     1.330     1.176    10.762      1.15     2.167
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2004 Urban Collector

* File 1, Run 1, Scenario 11.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 30.4
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2004
                           Month:  July
                        Altitude:  Low
                Minimum Temperature:  62.8 (F)
                Maximum Temperature:  83.7 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:  121. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4145    0.3328    0.1212              0.0368    0.0006    0.0018    0.0862    0.0059    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      1.511     1.242     1.625     1.344     1.498     0.672     0.713     0.578      2.11     1.356
     Composite CO  :      14.59     15.65     18.46     16.40     15.17     1.616     1.143     2.806     12.17     14.371
     Composite NOX :      1.108     1.256     1.578     1.342     4.354     1.330     1.177    10.764      1.15     2.167
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2004 Urban Local Road

* File 1, Run 1, Scenario 12.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
```

```
  M585 Warning:
            100% of VMT has been assigned to the local roadway
            type for all hours of the day for all vehicle types
            with an average speed of 12.9 mph.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2004
                            Month:  July
                         Altitude:  Low
               Minimum Temperature:  62.8 (F)
               Maximum Temperature:  83.7 (F)
                 Absolute Humidity:   75. grains/lb
                  Nominal Fuel RVP:   9.0 psi
                     Weathered RVP:   8.8 psi
               Fuel Sulfur Content:  121. ppm

               Exhaust I/M Program:  No
                  Evap I/M Program:  No
                       ATP Program:  No
                  Reformulated Gas:  No
```

Vehicle Type: GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.4145	0.3328	0.1212		0.0368	0.0006	0.0018	0.0862	0.0059	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	2.219	1.872	2.376	2.007	3.178	1.005	1.133	1.084	3.06	2.062
Composite CO :	13.37	15.06	18.16	15.88	36.59	2.641	2.025	6.563	24.94	14.822
Composite NOX :	1.092	1.207	1.524	1.291	3.738	1.766	1.573	12.147	0.96	2.234

2009

```
*****************************************************************************
* MOBILE6.2.01 (31-Oct-2002)                                                *
* Input file: 8HR2009.IN (file 1, run 1).                                   *
*****************************************************************************
  M603 Comment:
               User has disabled the calculation of REFUELING emissions.


* Reading Registration Distributions from the following external
* data file: REGDATA.D
  M 49 Warning:
                 1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                 1.00     MYR sum not = 1. (will normalize)

* # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2009 Rural Interstate

* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M515 Warning:
            The combined freeway and ramp average speed entered
            cannot be greater than 60.7 miles per hour.
            The average speed will be reset to this value.
  M582 Warning:
            The user supplied freeway average speed of 60.7
            will be used for all hours of the day. 100% of VMT
            has been assigned to a fixed combination of freeways
            and freeway ramps for all hours of the day and all
             vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
 NO HDDV DEFEAT DEVICE REBUILD PROGRAM IN EFFECT.

                    Calendar Year:  2009
                            Month:  July
                         Altitude:  Low
               Minimum Temperature:  62.8 (F)
               Maximum Temperature:  83.7 (F)
                 Absolute Humidity:   75. grains/lb
                  Nominal Fuel RVP:   9.0 psi
                     Weathered RVP:   8.8 psi
               Fuel Sulfur Content:   30. ppm

               Exhaust I/M Program:  No
                  Evap I/M Program:  No
                       ATP Program:  No
                  Reformulated Gas:  No
```

```
      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3465    0.3824    0.1392              0.0366    0.0003    0.0020    0.0873    0.0056    1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      0.837     0.672     0.883     0.728     0.644     0.236     0.346     0.276      2.38     0.732
    Composite CO  :      13.93     14.20     16.39     14.79     10.15     1.140     0.758     1.683     21.32    13.179
    Composite NOX :      0.773     0.898     1.255     0.994     3.062     1.030     1.280    13.029      1.70     2.048
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2009 Other Rural Principal Arterial

* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M581 Warning:
           The user supplied freeway average speed of 38.8
           will be used for all hours of the day. 100% of VMT
           has been assigned to the freeway roadway type for
           all hours of the day and all vehicle types.
  M 48 Warning:
             there are no sales for vehicle class HDGV8b

                  Calendar Year:  2009
                          Month:  July
                       Altitude:  Low
             Minimum Temperature:  62.8 (F)
             Maximum Temperature:  83.7 (F)
               Absolute Humidity:   75. grains/lb
                Nominal Fuel RVP:   9.0 psi
                   Weathered RVP:   8.8 psi
             Fuel Sulfur Content:   30. ppm

             Exhaust I/M Program:  No
                Evap I/M Program:  No
                     ATP Program:  No
                Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3465    0.3824    0.1392              0.0366    0.0003    0.0020    0.0873    0.0056    1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      0.945     0.744     0.987     0.809     0.769     0.265     0.395     0.341      1.91     0.819
    Composite CO  :      11.06     11.50     13.41     12.01      6.83     1.049     0.691     1.434      9.97    10.533
    Composite NOX :      0.711     0.817     1.159     0.908     2.598     0.563     0.695     7.881      1.22     1.512
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2009 Minor Rural Arterial

* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
           The user supplied arterial average speed of 44.8
           will be used for all hours of the day.  100% of VMT
           has been assigned to the arterial/collector roadway
           type for all hours of the day and all vehicle types.
  M 48 Warning:
             there are no sales for vehicle class HDGV8b

                  Calendar Year:  2009
                          Month:  July
                       Altitude:  Low
             Minimum Temperature:  62.8 (F)
             Maximum Temperature:  83.7 (F)
               Absolute Humidity:   75. grains/lb
                Nominal Fuel RVP:   9.0 psi
                   Weathered RVP:   8.8 psi
             Fuel Sulfur Content:   30. ppm

             Exhaust I/M Program:  No
                Evap I/M Program:  No
                     ATP Program:  No
                Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3465    0.3824    0.1392              0.0366    0.0003    0.0020    0.0873    0.0056    1.0000
```

```
 ------------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.911     0.722     0.956     0.784     0.712     0.249     0.369     0.306      1.85     0.789
    Composite CO  :     11.69     12.11     14.08     12.63      6.57     1.012     0.664     1.332      9.10    11.048
    Composite NOX :      0.722     0.833     1.176     0.925     2.714     0.599     0.740     7.091      1.25     1.460
 ------------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2009 Major Rural Collector

* File 1, Run 1, Scenario 4.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 34.2
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2009
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  62.8 (F)
                Maximum Temperature:  83.7 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3465    0.3824    0.1392              0.0366    0.0003    0.0020    0.0873    0.0056    1.0000
 ------------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.979     0.766     1.017     0.833     0.830     0.281     0.424     0.379      2.00     0.849
    Composite CO  :     10.64     11.09     12.96     11.59      7.40     1.103     0.731     1.581     11.01    10.203
    Composite NOX :      0.709     0.811     1.153     0.903     2.508     0.553     0.682     6.567      1.19     1.390
 ------------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2009 Minor Rural Collector

* File 1, Run 1, Scenario 5.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 35.1
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2009
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  62.8 (F)
                Maximum Temperature:  83.7 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3465    0.3824    0.1392              0.0366    0.0003    0.0020    0.0873    0.0056    1.0000
 ------------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.971     0.761     1.009     0.827     0.816     0.277     0.418     0.371      1.98     0.842
    Composite CO  :     10.66     11.12     12.98     11.62      7.24     1.089     0.721     1.544     10.77    10.216
    Composite NOX :      0.707     0.810     1.151     0.901     2.524     0.553     0.682     6.563      1.19     1.388
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2009 Rural Local Road

* File 1, Run 1, Scenario 6.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M585 Warning:
            100% of VMT has been assigned to the local roadway
            type for all hours of the day for all vehicle types
            with an average speed of 12.9 mph.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2009
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  62.8 (F)
              Maximum Temperature:  83.7 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3465    0.3824    0.1392              0.0366    0.0003    0.0020    0.0873    0.0056    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      1.472     1.169     1.532     1.266     1.742     0.459     0.730     0.786      3.03     1.321
     Composite CO  :     10.29     11.21     13.23     11.75     19.74     2.035     1.416     4.130     24.94    10.921
     Composite NOX :      0.719     0.808     1.152     0.900     2.088     0.742     0.919     7.904      0.96     1.493
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2009 Urban Interstate

* File 1, Run 1, Scenario 7.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M515 Warning:
            The combined freeway and ramp average speed entered
            cannot be greater than 60.7 miles per hour.
            The average speed will be reset to this value.
  M582 Warning:
            The user supplied freeway average speed of 60.7
            will be used for all hours of the day. 100% of VMT
            has been assigned to a fixed combination of freeways
            and freeway ramps for all hours of the day and all
             vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2009
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  62.8 (F)
              Maximum Temperature:  83.7 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3465    0.3824    0.1392              0.0366    0.0003    0.0020    0.0873    0.0056    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.837     0.672     0.883     0.728     0.644     0.236     0.346     0.276      2.38     0.732
     Composite CO  :     13.93     14.20     16.39     14.79     10.15     1.140     0.758     1.683     21.32    13.179
     Composite NOX :      0.773     0.898     1.255     0.994     3.062     1.030     1.280    13.029      1.70     2.048
  ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2009 Other Urban Freeways and Expressways

* File 1, Run 1, Scenario 8.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M582 Warning:
            The user supplied freeway average speed of 43.2
            will be used for all hours of the day. 100% of VMT
            has been assigned to a fixed combination of freeways
            and freeway ramps for all hours of the day and all
             vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2009
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  62.8 (F)
                Maximum Temperature:  83.7 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3465    0.3824    0.1392              0.0366    0.0003    0.0020    0.0873    0.0056    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.925     0.733     0.971     0.796     0.726     0.253     0.375     0.314      1.86     0.801
     Composite CO  :     11.91     12.25     14.23     12.78      6.64     1.021     0.671     1.358      9.31     11.207
     Composite NOX :      0.730     0.841     1.188     0.933     2.688     0.592     0.731     8.057      1.24     1.550
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2009 Other Urban Principal Arterial

* File 1, Run 1, Scenario 9.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 30.9
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2009
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  62.8 (F)
                Maximum Temperature:  83.7 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3465    0.3824    0.1392              0.0366    0.0003    0.0020    0.0873    0.0056    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      1.013     0.791     1.052     0.861     0.887     0.296     0.450     0.413      2.08     0.881
     Composite CO  :     10.57     11.02     12.88     11.52      8.07     1.160     0.773     1.739     12.00     10.186
     Composite NOX :      0.720     0.820     1.165     0.912     2.444     0.556     0.686     6.603      1.16     1.399
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2009 Other Urban Minor Arterial
```

```
* File 1, Run 1, Scenario 10.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 30.6
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2009
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  62.8 (F)
                Maximum Temperature:  83.7 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3465	0.3824	0.1392		0.0366	0.0003	0.0020	0.0873	0.0056	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	1.016	0.794	1.055	0.864	0.893	0.298	0.452	0.417	2.08	0.884
Composite CO :	10.57	11.01	12.87	11.51	8.14	1.166	0.777	1.755	12.10	10.185
Composite NOX :	0.721	0.821	1.166	0.913	2.437	0.557	0.687	6.607	1.15	1.400

```
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2009 Urban Collector

* File 1, Run 1, Scenario 11.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 30.4
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2009
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  62.8 (F)
                Maximum Temperature:  83.7 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3465	0.3824	0.1392		0.0366	0.0003	0.0020	0.0873	0.0056	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	1.019	0.796	1.057	0.866	0.897	0.299	0.454	0.419	2.09	0.887
Composite CO :	10.56	11.01	12.87	11.50	8.18	1.170	0.780	1.766	12.17	10.184
Composite NOX :	0.721	0.821	1.167	0.914	2.433	0.557	0.687	6.609	1.15	1.401

```
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2009 Urban Local Road

* File 1, Run 1, Scenario 12.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M585 Warning:
            100% of VMT has been assigned to the local roadway
            type for all hours of the day for all vehicle types
```

```
           with an average speed of 12.9 mph.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2009
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  62.8 (F)
                Maximum Temperature:  83.7 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
    VMT Distribution:    0.3465    0.3824    0.1392              0.0366    0.0003    0.0020    0.0873    0.0056    1.0000
   ---------------------------------------------------------------------------------------------------------------------
  Composite Emission Factors (g/mi):
      Composite VOC :      1.472     1.169     1.532     1.266     1.742     0.459     0.730     0.786      3.03     1.321
      Composite CO  :     10.29     11.21     13.23     11.75     19.74     2.035     1.416     4.130     24.94    10.921
      Composite NOX :      0.719     0.808     1.152     0.900     2.088     0.742     0.919     7.904      0.96     1.493
   ---------------------------------------------------------------------------------------------------------------------
```

2020

```
*****************************************************************************
* MOBILE6.2.01 (31-Oct-2002)                                                *
* Input file: 8HR2020.IN (file 1, run 1).                                   *
*****************************************************************************
  M603 Comment:
               User has disabled the calculation of REFUELING emissions.


* Reading Registration Distributions from the following external
* data file: REGDATA.D
  M 49 Warning:
                  1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                  1.00     MYR sum not = 1. (will normalize)

* # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Rural Interstate

* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M515 Warning:
             The combined freeway and ramp average speed entered
             cannot be greater than 60.7 miles per hour.
             The average speed will be reset to this value.
  M582 Warning:
             The user supplied freeway average speed of 60.7
             will be used for all hours of the day. 100% of VMT
             has been assigned to a fixed combination of freeways
             and freeway ramps for all hours of the day and all
              vehicle types.
  M 48 Warning:
               there are no sales for vehicle class HDGV8b
  M 48 Warning:
               there are no sales for vehicle class LDDT12
 NO HDDV DEFEAT DEVICE REBUILD PROGRAM IN EFFECT.

                    Calendar Year:  2020
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  62.8 (F)
                Maximum Temperature:  83.7 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2673	0.4395	0.1600		0.0369	0.0002	0.0024	0.0885	0.0052	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.353	0.337	0.474	0.374	0.259	0.057	0.127	0.175	2.38	0.356
Composite CO :	9.42	10.39	12.09	10.84	7.83	0.731	0.467	0.386	21.32	9.454
Composite NOX :	0.327	0.392	0.577	0.441	0.698	0.118	0.316	2.788	1.70	0.634

* #
* Scenario Title: 2020 Other Rural Principal Arterial

* File 1, Run 1, Scenario 2.
* #
M581 Warning:
The user supplied freeway average speed of 40.7
will be used for all hours of the day. 100% of VMT
has been assigned to the freeway roadway type for
all hours of the day and all vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b
M 48 Warning:
there are no sales for vehicle class LDDT12

Calendar Year: 2020
Month: July
Altitude: Low
Minimum Temperature: 62.8 (F)
Maximum Temperature: 83.7 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2673	0.4395	0.1600		0.0369	0.0002	0.0024	0.0885	0.0052	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.389	0.362	0.512	0.402	0.304	0.063	0.141	0.208	1.89	0.385
Composite CO :	7.74	8.60	10.04	8.98	5.16	0.660	0.418	0.319	9.64	7.725
Composite NOX :	0.303	0.356	0.531	0.403	0.601	0.066	0.175	1.668	1.23	0.499

* #
* Scenario Title: 2020 Minor Rural Arterial

* File 1, Run 1, Scenario 3.
* #
M583 Warning:
The user supplied arterial average speed of 46.1
will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.
M 48 Warning:
there are no sales for vehicle class HDGV8b
M 48 Warning:
there are no sales for vehicle class LDDT12

Calendar Year: 2020
Month: July
Altitude: Low
Minimum Temperature: 62.8 (F)
Maximum Temperature: 83.7 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

```
      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2673    0.4395    0.1600              0.0369    0.0002    0.0024    0.0885    0.0052    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.376     0.353     0.499     0.392     0.283     0.060     0.134     0.190      1.84     0.373
    Composite CO  :       8.11      8.99     10.50      9.40      5.10     0.645     0.407     0.305      9.01     8.064
    Composite NOX :      0.307     0.364     0.539     0.411     0.625     0.071     0.188     1.560      1.26     0.497
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Major Rural Collector

* File 1, Run 1, Scenario 4.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 34.1
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2020
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  62.8 (F)
              Maximum Temperature:  83.7 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2673    0.4395    0.1600              0.0369    0.0002    0.0024    0.0885    0.0052    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.409     0.375     0.530     0.417     0.339     0.069     0.154     0.240      2.00     0.404
    Composite CO  :       7.35      8.17      9.55      8.54      5.72     0.707     0.451     0.364     11.03     7.383
    Composite NOX :      0.300     0.351     0.525     0.398     0.571     0.064     0.169     1.407      1.19     0.471
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Minor Rural Collector

* File 1, Run 1, Scenario 5.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 34.9
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2020
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  62.8 (F)
              Maximum Temperature:  83.7 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
```

```
               GVWR:              <6000     >6000     (All)
                    ------     ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2673    0.4395    0.1600              0.0369    0.0002    0.0024    0.0885    0.0052    1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      0.405     0.373     0.527     0.414     0.334     0.069     0.152     0.236      1.98     0.400
    Composite CO  :       7.35      8.17      9.56      8.54      5.61     0.699     0.445     0.356     10.82     7.383
    Composite NOX :      0.299     0.351     0.524     0.397     0.574     0.064     0.169     1.406      1.19     0.470
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Rural Local Road

* File 1, Run 1, Scenario 6.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M585 Warning:
            100% of VMT has been assigned to the local roadway
            type for all hours of the day for all vehicle types
            with an average speed of 12.9 mph.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2020
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  62.8 (F)
                Maximum Temperature:  83.7 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
               GVWR:              <6000     >6000     (All)
                    ------     ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2673    0.4395    0.1600              0.0369    0.0002    0.0024    0.0885    0.0052    1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      0.640     0.608     0.815     0.663     0.719     0.116     0.260     0.498      3.03     0.655
    Composite CO  :       7.87      8.73     10.21      9.13     15.23     1.320     0.877     0.948     24.94     8.352
    Composite NOX :      0.317     0.356     0.518     0.399     0.476     0.085     0.227     1.748      0.96     0.502
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Urban Interstate

* File 1, Run 1, Scenario 7.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M515 Warning:
            The combined freeway and ramp average speed entered
            cannot be greater than 60.7 miles per hour.
            The average speed will be reset to this value.
  M582 Warning:
            The user supplied freeway average speed of 60.7
            will be used for all hours of the day. 100% of VMT
            has been assigned to a fixed combination of freeways
            and freeway ramps for all hours of the day and all
             vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2020
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  62.8 (F)
                Maximum Temperature:  83.7 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:   9.0 psi
                      Weathered RVP:   8.8 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
```

```
                Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2673    0.4395    0.1600              0.0369    0.0002    0.0024    0.0885    0.0052    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.353     0.337     0.474     0.374     0.259     0.057     0.127     0.175      2.38     0.356
    Composite CO  :      9.42     10.39     12.09     10.84      7.83     0.731     0.467     0.386     21.32     9.454
    Composite NOX :      0.327     0.392     0.577     0.441     0.698     0.118     0.316     2.788      1.70     0.634
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Other Urban Freeways and Expressways

* File 1, Run 1, Scenario 8.
* # # # # # # # # # # # # # # # # # # # # # # # # # #
  M582 Warning:
            The user supplied freeway average speed of 43.0
            will be used for all hours of the day. 100% of VMT
            has been assigned to a fixed combination of freeways
            and freeway ramps for all hours of the day and all
             vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2020
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  62.8 (F)
              Maximum Temperature:  83.7 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2673    0.4395    0.1600              0.0369    0.0002    0.0024    0.0885    0.0052    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.385     0.360     0.509     0.400     0.294     0.062     0.138     0.200      1.86     0.381
    Composite CO  :      8.10      8.95     10.44      9.35      5.13     0.653     0.413     0.313      9.33     8.037
    Composite NOX :      0.309     0.364     0.543     0.412     0.612     0.068     0.181     1.690      1.24     0.509
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Other Urban Principal Arterial

* File 1, Run 1, Scenario 9.
* # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 31.5
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2020
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  62.8 (F)
              Maximum Temperature:  83.7 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
```

```
                Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2673    0.4395    0.1600              0.0369    0.0002    0.0024    0.0885    0.0052    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC  :      0.420     0.385     0.543     0.427     0.358     0.072     0.161     0.257      2.06     0.415
    Composite CO   :      7.34      8.14      9.52      8.51      6.12     0.737     0.471     0.392     11.81     7.386
    Composite NOX  :      0.304     0.354     0.529     0.401     0.560     0.064     0.170     1.414      1.16     0.474
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Other Urban Minor Arterial

* File 1, Run 1, Scenario 10.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 30.9
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2020
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  62.8 (F)
              Maximum Temperature:  83.7 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2673    0.4395    0.1600              0.0369    0.0002    0.0024    0.0885    0.0052    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC  :      0.423     0.387     0.546     0.430     0.362     0.073     0.163     0.262      2.07     0.418
    Composite CO   :      7.33      8.14      9.51      8.51      6.23     0.744     0.476     0.399     12.00     7.387
    Composite NOX  :      0.305     0.355     0.530     0.402     0.557     0.064     0.170     1.415      1.16     0.475
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Urban Collector

* File 1, Run 1, Scenario 11.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 30.5
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2020
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  62.8 (F)
              Maximum Temperature:  83.7 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No
```

```
      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2673    0.4395    0.1600              0.0369    0.0002    0.0024    0.0885    0.0052    1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      0.425     0.389     0.549     0.432     0.365     0.074     0.164     0.265      2.09     0.420
    Composite CO  :       7.33      8.13      9.51      8.50      6.30     0.749     0.480     0.404     12.14     7.388
    Composite NOX :      0.306     0.356     0.531     0.402     0.555     0.064     0.170     1.416      1.15     0.475
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Urban Local Road

* File 1, Run 1, Scenario 12.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M585 Warning:
            100% of VMT has been assigned to the local roadway
            type for all hours of the day for all vehicle types
            with an average speed of 12.9 mph.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2020
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  62.8 (F)
              Maximum Temperature:  83.7 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2673    0.4395    0.1600              0.0369    0.0002    0.0024    0.0885    0.0052    1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      0.640     0.608     0.815     0.663     0.719     0.116     0.260     0.498      3.03     0.655
    Composite CO  :       7.87      8.73     10.21      9.13     15.23     1.320     0.877     0.948     24.94     8.352
    Composite NOX :      0.317     0.356     0.518     0.399     0.476     0.085     0.227     1.748      0.96     0.502
 ---------------------------------------------------------------------------------------------------------------------
-
```

2020 No Build

```
************************************************************************
* MOBILE6.2.01 (31-Oct-2002)                                           *
* Input file: 2020NB.IN (file 1, run 1).                               *
************************************************************************
  M603 Comment:
               User has disabled the calculation of REFUELING emissions.


* Reading Registration Distributions from the following external
* data file: REGDATA.D
  M 49 Warning:
                 1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                 1.00     MYR sum not = 1. (will normalize)

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Rural Interstate

* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M515 Warning:
            The combined freeway and ramp average speed entered
            cannot be greater than 60.7 miles per hour.
            The average speed will be reset to this value.
  M582 Warning:
            The user supplied freeway average speed of 60.7
            will be used for all hours of the day. 100% of VMT
            has been assigned to a fixed combination of freeways
```

```
           and freeway ramps for all hours of the day and all
            vehicle types.
 M 48 Warning:
            there are no sales for vehicle class HDGV8b
 M 48 Warning:
            there are no sales for vehicle class LDDT12
NO HDDV DEFEAT DEVICE REBUILD PROGRAM IN EFFECT.

                  Calendar Year:  2020
                         Month:  July
                      Altitude:  Low
             Minimum Temperature:  62.8 (F)
             Maximum Temperature:  83.7 (F)
               Absolute Humidity:   75. grains/lb
                Nominal Fuel RVP:   9.0 psi
                   Weathered RVP:   8.8 psi
             Fuel Sulfur Content:   30. ppm

             Exhaust I/M Program:  No
                Evap I/M Program:  No
                     ATP Program:  No
                Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2673    0.4395    0.1600              0.0369    0.0002    0.0024    0.0885    0.0052    1.0000
 -------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      0.353     0.337     0.474     0.374     0.259     0.057     0.127     0.175      2.38     0.356
    Composite CO  :      9.42     10.39     12.09     10.84      7.83     0.731     0.467     0.386     21.32     9.454
    Composite NOX :      0.327     0.392     0.577     0.441     0.698     0.118     0.316     2.788      1.70     0.634
 -------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Other Rural Principal Arterial

* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M581 Warning:
            The user supplied freeway average speed of 37.5
            will be used for all hours of the day. 100% of VMT
            has been assigned to the freeway roadway type for
            all hours of the day and all vehicle types.
  M 48 Warning:
            there are no sales for vehicle class HDGV8b
  M 48 Warning:
            there are no sales for vehicle class LDDT12

                  Calendar Year:  2020
                         Month:  July
                      Altitude:  Low
             Minimum Temperature:  62.8 (F)
             Maximum Temperature:  83.7 (F)
               Absolute Humidity:   75. grains/lb
                Nominal Fuel RVP:   9.0 psi
                   Weathered RVP:   8.8 psi
             Fuel Sulfur Content:   30. ppm

             Exhaust I/M Program:  No
                Evap I/M Program:  No
                     ATP Program:  No
                Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2673    0.4395    0.1600              0.0369    0.0002    0.0024    0.0885    0.0052    1.0000
 -------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      0.397     0.368     0.519     0.408     0.319     0.066     0.147     0.222      1.93     0.393
    Composite CO  :      7.53      8.37      9.78      8.75      5.37     0.679     0.431     0.338     10.23     7.539
    Composite NOX :      0.301     0.353     0.527     0.399     0.587     0.064     0.171     1.639      1.21     0.493
 -------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Minor Rural Arterial

* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 43.5
            will be used for all hours of the day.  100% of VMT
```

```
           has been assigned to the arterial/collector roadway
           type for all hours of the day and all vehicle types.
  M 48 Warning:
             there are no sales for vehicle class HDGV8b
  M 48 Warning:
             there are no sales for vehicle class LDDT12

                   Calendar Year:  2020
                           Month:  July
                        Altitude:  Low
                 Minimum Temperature:  62.8 (F)
                 Maximum Temperature:  83.7 (F)
                   Absolute Humidity:   75. grains/lb
                    Nominal Fuel RVP:   9.0 psi
                       Weathered RVP:   8.8 psi
                 Fuel Sulfur Content:   30. ppm

                 Exhaust I/M Program:  No
                    Evap I/M Program:  No
                         ATP Program:  No
                    Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                 <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
    VMT Distribution:    0.2673    0.4395    0.1600              0.0369    0.0002    0.0024    0.0885    0.0052    1.0000
   ---------------------------------------------------------------------------------------------------------------------
   Composite Emission Factors (g/mi):
       Composite VOC :      0.382     0.357     0.505     0.397     0.292     0.062     0.137     0.198      1.86     0.378
       Composite CO  :      7.94      8.81     10.28      9.20      5.10     0.650     0.411     0.310      9.26     7.901
       Composite NOX :      0.305     0.360     0.535     0.407     0.613     0.068     0.181     1.502      1.24     0.488
   ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Major Rural Collector

* File 1, Run 1, Scenario 4.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
             The user supplied arterial average speed of 33.6
             will be used for all hours of the day.  100% of VMT
             has been assigned to the arterial/collector roadway
             type for all hours of the day and all vehicle types.
  M 48 Warning:
             there are no sales for vehicle class HDGV8b
  M 48 Warning:
             there are no sales for vehicle class LDDT12

                   Calendar Year:  2020
                           Month:  July
                        Altitude:  Low
                 Minimum Temperature:  62.8 (F)
                 Maximum Temperature:  83.7 (F)
                   Absolute Humidity:   75. grains/lb
                    Nominal Fuel RVP:   9.0 psi
                       Weathered RVP:   8.8 psi
                 Fuel Sulfur Content:   30. ppm

                 Exhaust I/M Program:  No
                    Evap I/M Program:  No
                         ATP Program:  No
                    Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                 <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
    VMT Distribution:    0.2673    0.4395    0.1600              0.0369    0.0002    0.0024    0.0885    0.0052    1.0000
   ---------------------------------------------------------------------------------------------------------------------
   Composite Emission Factors (g/mi):
       Composite VOC :      0.411     0.377     0.533     0.419     0.343     0.070     0.156     0.243      2.01     0.406
       Composite CO  :      7.35      8.16      9.54      8.53      5.79     0.713     0.454     0.369     11.17     7.384
       Composite NOX :      0.301     0.352     0.526     0.398     0.569     0.064     0.169     1.409      1.18     0.472
   ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Minor Rural Collector

* File 1, Run 1, Scenario 5.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
             The user supplied arterial average speed of 34.9
             will be used for all hours of the day.  100% of VMT
             has been assigned to the arterial/collector roadway
```

```
           type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2020
                           Month:  July
                        Altitude:  Low
              Minimum Temperature:  62.8 (F)
              Maximum Temperature:  83.7 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2673    0.4395    0.1600              0.0369    0.0002    0.0024    0.0885    0.0052    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.405     0.373     0.527     0.414     0.334     0.069     0.152     0.236      1.98     0.400
     Composite CO  :       7.35      8.17      9.56      8.54      5.61     0.699     0.445     0.356     10.82     7.383
     Composite NOX :      0.299     0.351     0.524     0.397     0.574     0.064     0.169     1.406      1.19     0.470
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Rural Local Road

* File 1, Run 1, Scenario 6.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M585 Warning:
            100% of VMT has been assigned to the local roadway
            type for all hours of the day for all vehicle types
            with an average speed of 12.9 mph.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2020
                           Month:  July
                        Altitude:  Low
              Minimum Temperature:  62.8 (F)
              Maximum Temperature:  83.7 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   9.0 psi
                    Weathered RVP:   8.8 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2673    0.4395    0.1600              0.0369    0.0002    0.0024    0.0885    0.0052    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.640     0.608     0.815     0.663     0.719     0.116     0.260     0.498      3.03     0.655
     Composite CO  :       7.87      8.73     10.21      9.13     15.23     1.320     0.877     0.948     24.94     8.352
     Composite NOX :      0.317     0.356     0.518     0.399     0.476     0.085     0.227     1.748      0.96     0.502
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Urban Interstate

* File 1, Run 1, Scenario 7.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M515 Warning:
            The combined freeway and ramp average speed entered
            cannot be greater than 60.7 miles per hour.
            The average speed will be reset to this value.
  M582 Warning:
            The user supplied freeway average speed of 60.7
```

```
          will be used for all hours of the day. 100% of VMT
          has been assigned to a fixed combination of freeways
          and freeway ramps for all hours of the day and all
           vehicle types.
  M 48 Warning:
           there are no sales for vehicle class HDGV8b
  M 48 Warning:
           there are no sales for vehicle class LDDT12

                Calendar Year:  2020
                       Month:  July
                    Altitude:  Low
           Minimum Temperature:  62.8 (F)
           Maximum Temperature:  83.7 (F)
             Absolute Humidity:   75. grains/lb
              Nominal Fuel RVP:   9.0 psi
                 Weathered RVP:   8.8 psi
           Fuel Sulfur Content:   30. ppm

           Exhaust I/M Program:  No
              Evap I/M Program:  No
                   ATP Program:  No
              Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2673	0.4395	0.1600		0.0369	0.0002	0.0024	0.0885	0.0052	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.353	0.337	0.474	0.374	0.259	0.057	0.127	0.175	2.38	0.356
Composite CO :	9.42	10.39	12.09	10.84	7.83	0.731	0.467	0.386	21.32	9.454
Composite NOX :	0.327	0.392	0.577	0.441	0.698	0.118	0.316	2.788	1.70	0.634

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Other Urban Freeways and Expressways

* File 1, Run 1, Scenario 8.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M582 Warning:
           The user supplied freeway average speed of 42.2
           will be used for all hours of the day. 100% of VMT
           has been assigned to a fixed combination of freeways
           and freeway ramps for all hours of the day and all
            vehicle types.
  M 48 Warning:
           there are no sales for vehicle class HDGV8b
  M 48 Warning:
           there are no sales for vehicle class LDDT12

                Calendar Year:  2020
                       Month:  July
                    Altitude:  Low
           Minimum Temperature:  62.8 (F)
           Maximum Temperature:  83.7 (F)
             Absolute Humidity:   75. grains/lb
              Nominal Fuel RVP:   9.0 psi
                 Weathered RVP:   8.8 psi
           Fuel Sulfur Content:   30. ppm

           Exhaust I/M Program:  No
              Evap I/M Program:  No
                   ATP Program:  No
              Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2673	0.4395	0.1600		0.0369	0.0002	0.0024	0.0885	0.0052	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.387	0.362	0.511	0.402	0.297	0.062	0.139	0.203	1.87	0.383
Composite CO :	8.05	8.89	10.37	9.29	5.15	0.656	0.415	0.315	9.44	7.987
Composite NOX :	0.308	0.363	0.542	0.411	0.608	0.067	0.179	1.676	1.23	0.506

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Other Urban Principal Arterial

* File 1, Run 1, Scenario 9.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
```

```
           The user supplied arterial average speed of 29.6
           will be used for all hours of the day.  100% of VMT
           has been assigned to the arterial/collector roadway
           type for all hours of the day and all vehicle types.
  M 48 Warning:
             there are no sales for vehicle class HDGV8b
  M 48 Warning:
             there are no sales for vehicle class LDDT12

                   Calendar Year:  2020
                           Month:  July
                        Altitude:  Low
             Minimum Temperature:  62.8 (F)
             Maximum Temperature:  83.7 (F)
               Absolute Humidity:   75. grains/lb
                Nominal Fuel RVP:   9.0 psi
                   Weathered RVP:   8.8 psi
             Fuel Sulfur Content:   30. ppm

             Exhaust I/M Program:  No
                Evap I/M Program:  No
                     ATP Program:  No
                Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2673	0.4395	0.1600		0.0369	0.0002	0.0024	0.0885	0.0052	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.430	0.393	0.554	0.436	0.373	0.075	0.167	0.271	2.11	0.425
Composite CO :	7.34	8.14	9.51	8.51	6.48	0.762	0.489	0.416	12.45	7.404
Composite NOX :	0.307	0.357	0.533	0.404	0.551	0.064	0.171	1.422	1.14	0.477

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Other Urban Minor Arterial

* File 1, Run 1, Scenario 10.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
           The user supplied arterial average speed of 29.7
           will be used for all hours of the day.  100% of VMT
           has been assigned to the arterial/collector roadway
           type for all hours of the day and all vehicle types.
  M 48 Warning:
             there are no sales for vehicle class HDGV8b
  M 48 Warning:
             there are no sales for vehicle class LDDT12

                   Calendar Year:  2020
                           Month:  July
                        Altitude:  Low
             Minimum Temperature:  62.8 (F)
             Maximum Temperature:  83.7 (F)
               Absolute Humidity:   75. grains/lb
                Nominal Fuel RVP:   9.0 psi
                   Weathered RVP:   8.8 psi
             Fuel Sulfur Content:   30. ppm

             Exhaust I/M Program:  No
                Evap I/M Program:  No
                     ATP Program:  No
                Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2673	0.4395	0.1600		0.0369	0.0002	0.0024	0.0885	0.0052	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.429	0.392	0.553	0.435	0.372	0.075	0.167	0.271	2.11	0.425
Composite CO :	7.34	8.14	9.51	8.50	6.46	0.761	0.488	0.415	12.41	7.400
Composite NOX :	0.307	0.357	0.533	0.404	0.551	0.064	0.171	1.421	1.14	0.477

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Urban Collector

* File 1, Run 1, Scenario 11.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
           The user supplied arterial average speed of 29.9
```

```
           will be used for all hours of the day.  100% of VMT
           has been assigned to the arterial/collector roadway
           type for all hours of the day and all vehicle types.
  M 48 Warning:
             there are no sales for vehicle class HDGV8b
  M 48 Warning:
             there are no sales for vehicle class LDDT12

                   Calendar Year:  2020
                           Month:  July
                        Altitude:  Low
             Minimum Temperature:  62.8 (F)
             Maximum Temperature:  83.7 (F)
               Absolute Humidity:   75. grains/lb
                Nominal Fuel RVP:   9.0 psi
                   Weathered RVP:   8.8 psi
             Fuel Sulfur Content:   30. ppm

             Exhaust I/M Program:  No
                Evap I/M Program:  No
                     ATP Program:  No
                Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
    VMT Distribution:    0.2673    0.4395    0.1600              0.0369    0.0002    0.0024    0.0885    0.0052    1.0000
   -------------------------------------------------------------------------------------------------------------------
  Composite Emission Factors (g/mi):
      Composite VOC :      0.428     0.391     0.552     0.434     0.370     0.075     0.166     0.269      2.10     0.424
      Composite CO  :      7.33      8.13      9.50      8.50      6.41     0.758     0.485     0.412     12.35     7.392
      Composite NOX :      0.307     0.357     0.532     0.403     0.552     0.064     0.171     1.419      1.15     0.476
   -------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario Title: 2020 Urban Local Road

* File 1, Run 1, Scenario 12.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M585 Warning:
             100% of VMT has been assigned to the local roadway
             type for all hours of the day for all vehicle types
             with an average speed of 12.9 mph.
  M 48 Warning:
             there are no sales for vehicle class HDGV8b
  M 48 Warning:
             there are no sales for vehicle class LDDT12

                   Calendar Year:  2020
                           Month:  July
                        Altitude:  Low
             Minimum Temperature:  62.8 (F)
             Maximum Temperature:  83.7 (F)
               Absolute Humidity:   75. grains/lb
                Nominal Fuel RVP:   9.0 psi
                   Weathered RVP:   8.8 psi
             Fuel Sulfur Content:   30. ppm

             Exhaust I/M Program:  No
                Evap I/M Program:  No
                     ATP Program:  No
                Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
    VMT Distribution:    0.2673    0.4395    0.1600              0.0369    0.0002    0.0024    0.0885    0.0052    1.0000
   -------------------------------------------------------------------------------------------------------------------
  Composite Emission Factors (g/mi):
      Composite VOC :      0.640     0.608     0.815     0.663     0.719     0.116     0.260     0.498      3.03     0.655
      Composite CO  :      7.87      8.73     10.21      9.13     15.23     1.320     0.877     0.948     24.94     8.352
      Composite NOX :      0.317     0.356     0.518     0.399     0.476     0.085     0.227     1.748      0.96     0.502
   -------------------------------------------------------------------------------------------------------------------
-
```